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A SHORT HISTORY  
OF LABOUR CONDITIONS  
UNDER INDUSTRIAL CAPITALISM

## OTHER BOOKS BY THE AUTHOR

*Zurück zu Marx*, Leipzig 1926.

*Wages and Labor's Share* (with Marguerite Kuczynski), Washington 1927.

*Wages in Manufacturing Industries*, Washington 1927.

*Der Staatshaushalt in der sozialistischen und kapitalistischen Gesellschaft*, Berlin 1928.

*Löhne und Konjunktur in den Vereinigten Staaten von Amerika*, Berlin 1928.

*Die Lage des amerikanischen Fabrikarbeiters* (with Marguerite Kuczynski), Leipzig 1929. Russian edition, 1930.

*Die Lage des deutschen Industriearbeiters* (with Marguerite Kuczynski), Berlin 1931 (burned 1933). Russian edition, 1931. Ukrainian edition, 1931.

*Rote Arbeit*, Berlin 1931.

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*Löhne und Konjunktur in Deutschland, 1887-1932*, Berlin 1933.

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*Les Antécédents d'une Révolution (1789)*, Paris 1936.

*Labour Conditions in Western Europe, 1820 to 1935*, London 1937.  
American edition, 1937.

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*The Conditions of the Workers in Great Britain, Germany and the Soviet Union, 1932-1938*, London 1939.

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American edition, 1942. Argentinian edition, 1943.

*A Short History of Labour Conditions under Industrial Capitalism:*

Volume I: Great Britain and the Empire, 1750 to the present day.

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Volume II: The United States of America, 1789 to the present day.

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Volume III, Part 2: Germany under Fascism, 1933 to the present day.

A SHORT HISTORY  
OF LABOUR CONDITIONS  
UNDER INDUSTRIAL CAPITALISM

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VOLUME THREE, PART I

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GERMANY  
1800 TO THE PRESENT DAY

*by*  
JÜRGEN KUCZYNSKI

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## PREFACE AND INTRODUCTION

THE following volume, though written only during the last year, is the outcome of twenty years of study of labour conditions in Germany. Less than a quarter of a century among the hundred and fifty years covered, have actually been observed by me as a contemporary. During those years I was taught by the leaders of German labour how to study contemporary labour conditions. But long before I took a conscious interest in the development of labour conditions I absorbed much information by listening to the conversations of my father, R. R. Kuczynski, who about half a century ago became Germany's foremost labour statistician.

While extremely fortunate in my training as an observer of contemporary labour conditions, the effects of which I hope appear in this book (and its sequel\*), my training as a historian of labour conditions was extremely one-sided. It was practically confined to "home work." For about the past fifty years the statistical study of the history of labour conditions in Germany has practically been a family monopoly. From the eighteen nineties to the early twenties my father was almost the only person who did original work on this subject, and even so powerful and brilliant an "outsider" as Tyszka (*Loehne und Lebenshaltungskosten in Westeuropa im 19. Jahrhundert*, Muenchen, 1914) relied largely on my father's studies as to his "raw material supply" for Germany. Since the middle twenties I have tried both to continue farther backwards and to bring forward these studies.

Such a family monopoly has all the drawbacks of monopoly wherever we meet it in capitalist society: it tends to restrict production (even if the monopoly as in this case is an involuntary one), and it tends to retard technical progress. Both effects need no explanation as the causes are only too obvious: the more people are engaged on such studies the greater will be the output; and the more heads are doing the work the greater is the range of ideas. It is a highly unsatisfactory state of affairs to say, for instance, about my cost of living index or my wage

\* *A Short History of Labour Conditions in Germany under Fascism*, London, 1944.

index for Germany in the nineteenth century that it is the best available, if one can say at the same time that it is the worst in existence, for the simple reason that it is the only one which has been computed. It is even more unsatisfactory to note that the unique collection of data on the development of productivity which has been for many years available in official publications to anyone interested in the subject, is studied here for the first time in relation to labour conditions or general economic development. Such facts do not speak for the author of this book, but rather indicate the low level of the statistical study of labour conditions in Germany.

This low level of the general state of the statistical study of labour conditions in Germany accounts for the specific difference in structure of this volume from those preceding it in this series. For Great Britain, for instance, I was able to confine myself to the presentation of a number of wage indices, while in the case of Germany I have also to give the basic data on which my indices are constructed. For in the case of Germany we have not such a fine collection of wage data as Britain has through the work of Bowley and Wood—except for the period from 1870 to 1909 where we have the unique collection published by my father. The basic wage material for the period from 1800 to 1914 was collected in Germany about ten years ago; some additional material I recently found in the British Museum. The pamphlet literature used for the first fifty years of the nineteenth century comes largely from the collection of the British Museum, where the officials were kind enough to give me special facilities in searching for such literature.

It is obvious that if I had written this volume in Germany before Fascism came to power I would have had more material at my disposal, although I do not believe that any of the statistical conclusions would have been affected. But not only in this respect is this book marked by the special circumstances under which it was written.

The last few years, the terrifying experience of German Fascism acting on a world scale, the fact that the German people has followed Fascism so long with such brutal *Gruendlichkeit*, have naturally made us all look at the past history of Germany, and also of the German working class, with a sharpened percep-



tion for weaknesses and traits which have made the German people less resistant against and more susceptible to the poison of Fascism than other nations. While this book does not deal with the history of the German labour movement, neither with the German trade unions nor with the labour parties—a subject about which I do not yet know enough, and where I find the greatest difficulties in evaluating the significance of the facts I do know—it is obvious that the change in conception of the past history of the German people, caused by contemporary experiences, also finds expression in this statistical history of labour conditions. In fact, it would be a poor indication of the spirit of this book if this were not the case.

One further point must be mentioned. This book deals only with a subject which has been comparatively little explored; it is not only written at a moment when our whole conception of the history of Germany is undergoing a serious revaluation: it also deals with certain problems which up to now have been largely neglected in the general study of labour conditions, and whose treatment here is, therefore, preliminary in character, and at best a respectable pioneer effort. The most important of these is that of the relation between changes in the methods of exploitation and of the development of labour productivity. Since Germany is the only country for which I have been able to make studies of the development of productivity for a period of a hundred and fifty years (that is from the very beginning of the Industrial Revolution down to the present day), these problems have been studied in some detail as far as this was possible on the basis of my limited knowledge and within the framework of such a history of labour conditions. I believe it would be fruitful for the study of labour conditions if others were to take up this subject and advance our knowledge of it beyond the point reached in this first attempt of mine.

In conclusion, I wish sincerely to thank Mr. Charles Ashleigh for his valiant efforts in this and the preceding volumes to correct the grammar and style of "my English." I sincerely hope that readers will not say that he should have devoted his brilliant gifts in this direction to better tasks.

LONDON

*November 7, 1944*

JÜRGEN KUCZYNSKI



## CHAPTER I

### EARLY CAPITALISM, 1800 TO 1850

#### I. THE ECONOMIC BACKGROUND

WHEN we survey the Europe of the closing years of the eighteenth century, we note a considerable variety in forms of society, much greater than one hundred years later, when we enter the twentieth century.

Great Britain had already been a bourgeois state for at least 150 years. France had just gone through a revolution which had brought the bourgeois-capitalist class to power. Germany was split into literally hundreds of small and large sovereign units in which feudal absolute princes reigned. Conditions in Italy were no different. Spain and Russia were still in a stage which in many respects ante-dates the period of feudal absolutism which we find in the German states.

If we compare conditions in Great Britain, France and Germany, not only from the political but also from the economic point of view, during the first fifty years of the nineteenth century, we make a surprising discovery. Great Britain, which around 1800 was an old-established capitalist society and which, therefore, was economically far more advanced than France (where only recently the bourgeoisie had gained power) and than Germany (where feudal absolutism still reigned), maintained her advanced economic position throughout the half-century. France, which around 1800 had just gained full freedom for capitalist production, did not progress in an outstanding way. Germany, which at the same period was an agglomeration of feudal or semi-feudal states and which during the following fifty years made but little political progress towards capitalist society, gained in the development of her capitalist production on France as well as Great Britain.

The following very rough estimates\* give an interesting illustration of some important factors in the comparative development of the three countries in the period under review:

\* Cf. M. G. Mulhall, *The Dictionary of Statistics*, London, 1899.

## POPULATION, 1800 TO 1850

*(In millions)*

<i>Year</i>	<i>United Kingdom</i>	<i>France</i>	<i>Germany</i>
1800	16	27	23
1820	21	30	27
1840	27	34	33
1850	27	36	36

The population of the United Kingdom (England, Wales, Scotland, Ireland) was in 1800 smaller than that of either France or Germany, and, though in the following fifty years it rose more quickly than in the two other countries, it was in 1850 about one-quarter lower than that of France or Germany. France in 1800 had a somewhat higher population than Germany; by 1850 the German population had reached the French figure.

## VALUE OF MINING PRODUCTION (EXCLUDING PRECIOUS METALS), 1800 TO 1850

*(In millions £ sterling)*

<i>Year</i>	<i>United Kingdom</i>	<i>France</i>	<i>Germany</i>
1801-1820	123	13	12
1821-1840	204	27	23
1841-1850	194	26	22

Mining production in Great Britain was about ten times greater in the first twenty years of the century than in France or Germany; the relative British advance was not quite maintained during the following decades, and Germany lost slightly as compared with France.

## VALUE OF MANUFACTURING PRODUCTION, 1800 TO 1840

*(In millions £ sterling)*

<i>Year</i>	<i>United Kingdom</i>	<i>France</i>	<i>Germany</i>
1800	230	190	60
1820	290	220	85
1840	387	264	150

British production in 1800 was somewhat higher than that of France and very much higher than that of Germany. By 1820 manufacturing production in Britain had increased by roughly 25 per cent, in France it had increased only slightly more than 15 per cent, while in Germany it had risen by over 40 per cent. During the following twenty years it rose by about one-third in



Britain, by one-fifth in France, and by more than three-quarters in Germany.

Total industrial production had risen most in the politically least progressive of the three countries; and it would be incorrect to say that the rapid rise in Germany was chiefly due to the fact that production at the outset was minute in 1800 as compared with that of France or Britain. More than half a century after the French Revolution, which freed the bourgeoisie in that country, German capitalist production, still fettered by semi-feudalism, was only about 40 per cent below the French level. Iron production, which under semi-feudalism had risen in Germany by over 1,000 per cent between the early years and the middle of the nineteenth century, amounted in the fifties to two-thirds or more of French production.

From this comparative survey of the development of capitalist industrial production, especially in France and Germany, two important conclusions must be drawn. The first refers to industrial development. If under the unfavourable conditions of semi-feudalism capitalist production in Germany increased at a faster rate than in France where these fetters had been removed in the great Revolution—how much quicker would the development in Germany have been without semi-feudal impediment!

This observation also to a certain extent throws light upon the development of German industry in later decades, when semi-feudalism lost considerable ground and Germany quickly out-paced all European countries: it was the impetus of a delayed movement, delayed through semi-feudalism in the first half of the nineteenth century.

The second important conclusion to be drawn is that the material conditions for an overthrow of feudalism in Germany existed early in the nineteenth century: the bourgeoisie had already a considerable economic importance. But it did not make good use of existent opportunities. While economic development, in spite of impeding semi-feudal institutions, progressed at a faster rate than in France, political development—the freeing of the bourgeoisie from the limitations of semi-feudalism—proceeded very slowly.\* And while the relative retarding of

\* Gervinus, one of the few great progressive historians of Germany, warned: "Our poetry has had its time; and if German life is not to stand

economic progress resulted later in a burst of activity, the tardiness in political development has always burdened and stifled the German people, right up to the present day.\*

\*                      \*                      \*

Like other countries Germany was predominantly agricultural at the dawn of the nineteenth century. Prussia was the largest of the numerous German states, with a population of little less than 10 millions.† Only 2·7 millions lived in towns,‡ and even of these many were engaged in agricultural work. Dieterici is right in saying§ that more than 80 per cent of the Prussian population were occupied in, or derived their living from, agriculture.

Feudal laws and decrees forced manufacturers and merchants to live in the cities, of which Berlin with little more even than 150,000 inhabitants was the biggest—Paris counted many more at the end of the thirteenth century, and London had about six times that number in 1800. Krug§ estimates that less than 5 per cent of the Prussian national income came from industrial production; the largest volume of non-agricultural goods was produced by small-scale craftsmen or home production. Of the 200,000 looms, more or less, used for the production of textiles, more than three-quarters were used only occasionally, as an auxiliary.

Our data on the development of industrial capitalist production are confined to a few industries, and even for them we have no figures for the whole of the first half of the nineteenth century. But we have considerably more than would justify the intellectual laziness of the Institut für Konjunkturforschung in investigating

still, then we must entice the talents, that now have no object, into the world of reality and the state where a new spirit can be poured into new matter.” (*Geschichte der Deutschen Dichtung*, 4th ed., Vol. IV, p. vii, translation by Ernst Kohn-Bramstedt, *Aristocracy and the Middle Classes in Germany*, p. 72.)

\* And consequently, we must speak to-day with even more justification than Marx did 100 years ago of the German *Misere*.

† C. F. W. Dieterici, *Der Volkswohlstand im Preussischen Staate*. Berlin, 1846.

‡ A town in Prussia at that time often counted less than 1,000 people. The town of Belchatow had only 59 inhabitants in 1803. (L. Krug, see footnote §.) In 1816 there were four towns with less than 250 people.

§ Leopold Krug, *Betrachtungen über den National-Reichtum des Preussischen Staats und über den Wohlstand seiner Bewohner*. Berlin, 1805.

no further back than the year 1860. For we can go much further back. Moreover, the few data which the Institut gives for some previous years are incorrect.\*

The production figures given by the Institut for the first half of the nineteenth century are:

GERMAN INDUSTRIAL PRODUCTION, 1800 TO 1860  
(1860 = 100)

Time	Total	Production Goods		Consumption Goods		Total†
		Mining	Metals	Textiles	Foodstuffs	
About 1800	18	7	3	25	24	2.5
About 1830	46	15	10	49	71	6.5
About 1845	70	30	—	70	75	8.0
About 1860	100	100	100	100	100	13.8

According to this table, industrial production as a whole increased about five and a half times between 1800 and 1860. The increase has been very unevenly distributed between the production goods industries, showing increases of several thousand per cent, and the consumption goods industries with increases of only 300 per cent. Though the author is extremely chary of giving sources and methods of computation, it is not difficult to see that he mixes up production of non-agricultural goods and industrial production. Both the industrial production of textiles and of foodstuffs really increased at least as much as that of mining and metals, if not more. To give only one example, the author seems to have computed the consumption of textile raw materials in 1800 and in 1860, has perhaps also taken into account some figures on employment, spindles, etc., and has then concluded that production increased by so and so much per cent. In doing this he has not taken into account the fact that, about the year 1800, a large part of textile production was home production, usually not designed for the home or foreign market but for private consumption in the producer's family, and not industrial or factory production. While, therefore, total production of textile goods may have increased between 1800 and 1860 only four times, industrial textile production

\* Cf. Rolf Wagenführ, *Die Industriewirtschaft, Sonderheft 31*. Mr. Wagenführ is a German statistician who knows Russian and whose special task it was in 1941 to prove that Soviet statistics were all wrong, and that they showed much too steep a rise in production.

† 1913 equals 100.

probably increased twenty times, if not more.\* According to my computation, one can estimate the increase of industrial production during the first half of the nineteenth century as follows:†

GERMAN INDUSTRIAL PRODUCTION, 1800 TO 1850

Decade	(1860 = 100)			Total‡
	Total	Production Goods	Consumption Goods	
1801 to 1810	(6)	9	(3)	1
1811 to 1820	(7)	9	(5)	1
1821 to 1830	(12)	13	(10)	2
1831 to 1840	(23)	21	(25)	3
1841 to 1850	(36)	37	(35)	5

These figures indicate a very great increase in industrial production, much greater than that shown by the Institut's figures. This rapid increase in Germany is not surprising if we realize that, during the eighteenth century, and even during its last decades, industrial production was on a very small scale;§ that Prussia, the largest German state, for instance, used during the eighteen-twenties less than 2,000 tons of cotton annually,|| or that at the beginning of the century the total number of textile factory workers in Prussia was little more than 3,000.¶

\*                      \*                      \*

If we study the development of industrial production just before the end of the half century, we find a specially rapid development in the late thirties and the forties, and this in spite of the fact that both the early and late forties were years of severe economic crisis. The following table gives for three four-

\* There is one more complication, however, to be mentioned. During this period production often became capitalist without becoming factory production. A considerable part of home textile production formerly destined for the family or a closed circle of persons became home industrial production, that is, production at home for a capitalist employer who sold the products on the national or international market. But the difference in the rate of growth of this kind of capitalist production and capitalist factory production is not decisive as is the difference between the growth of textile production as a whole and capitalist textile production.

† For sources and more detailed data see Appendix to Chapter I. Figures in brackets are very rough estimates.

‡ 1913 equals 100.

§ As compared with 1860, but not as compared with contemporary France, for instance.

|| Cf. C. W. Ferber, *Beiträge zur Kenntnis des gewerblichen und kommerziellen Zustandes der preussischen Monarchie*, and "Neue Beiträge," etc. Berlin, 1829 and 1832.

¶ C. F. W. Dieterici, l.c.



year periods the average production of cotton goods and of pig iron\* for the Zollverein, that is almost the whole of Germany:

### PIG IRON AND COTTON GOODS PRODUCTION

(1860 = 100)

<i>Period</i>	<i>Pig Iron</i>	<i>Cotton Goods</i>
1836-1839	27	26
1840-1843	31	37
1844-1847	40	42

This rapid growth of industrial production is partly due to the development of the railways, especially in the heavy industrial sector. The first railway for wagons driven by a locomotive was built in Germany in 1835. The railway mileage in Prussia, where the first railway line was opened in 1838, developed as follows:†

### RAILWAY MILEAGE IN PRUSSIA, 1838 TO 1847

(1,000 Prussian miles)

1838	4.6	1841	41.3	1844	114.3	1847	290.0
1839	9.2	1842	66.9	1845	138.3		
1840	17.7	1843	100.8	1846	236.3		

It is not surprising that in this period the new capitalist method of large-scale financing, the formation of joint-stock companies, was also largely developed in Prussia. The following table indicates the new capital invested in railways and, through the formation of new companies, in mining and foundries.†

### CAPITAL INVESTMENTS IN MINING, FOUNDRIES AND RAILWAYS, 1837 TO 1847

(In millions of marks)

<i>Year</i>	<i>Mining and Foundries, Invested in New Companies</i>	<i>Railways, Cumulative Investment</i>
1837	—	21.1
1838	3.6	26.5
1839	—	36.7
1840	1.9	65.9
1841	—	72.9
1842	3.6	85.8
1843	—	181.3
1844	1.1	236.4
1845	24.0	295.1
1846	—	394.0
1847	—	454.1

\* See also Appendix to Chapter I.

† See *Jahrbuch fuer die Amtliche Statistik des Preussischen Staats*, I. Jahrgang.

Thus, within eleven years over 450 million marks were invested in railways. If we bear in mind that total deposits in savings banks in 1847 amounted to roughly one-tenth of this sum,\* or that the average wages of a fully employed industrial worker (that is, for the best paid workers) amounted to between 400 and 500 marks per year, and that the capital invested in the railways by 1847 amounted to almost 30 marks per head of the population, we can gauge the enormous industrial progress the above table implies. So impressed by this rapid growth of capital investment was Dieterici, the official Prussian statistician, and one of the most servile men in this servile Prussian period (though the greatest statistical technician of his time), that he wrote:† “Oh, do not rage in your bowels! Take good care of the capital, see to it that it grows! All will gain from this.”

The chief cause of the rapid rise of industry was, on the one hand, technical, the growth of the railways‡ (which in turn was dependent upon a minimum of industry and trade), and on the other hand an economic-political one: the formation of the Zollverein. Through legislation in 1818 most tariffs, customs and similar trade hindrances within Prussia were abolished, while the new tariff system itself favoured the growth of industry. In the following years custom unions were concluded with some adjacent German states. Finally, in 1834, almost all German states joined in one great customs union which gave a very considerable impetus to inter-German and international trade and consequently to industrial production.§ The effects of this were soon felt, and the above figures indicate the intensity of the reaction. The connection between the technical and the economic factors is obvious. Without the unification of the customs system

\* See *Jahrbuch fuer die Amtliche Statistik des Preussischen Staats*, IV. Jahrgang.

† *Über Preussische Zustände, Über Arbeit und Kapital*, Berlin, 1848.

‡ Combined with road construction. Dieterici (*Der Volkswohlstand, etc.*) estimates the length of decent highways (*Chausseen*) at 10 miles in 1805, and at 1,148 miles in 1831.

§ It is not surprising that Germany's most observant historians, Marx and Engels, date the rise of genuine bourgeois political Opposition movement to semi-feudalism around 1840. And it is not by chance that one of the most widely read bourgeois writers, B. Auerbach, published in 1843 a popular book called *Der Gebildete Buerger* (the educated citizen), glorifying the free and educated middle-class bourgeois as the greatest product of the history of mankind. (A similar ideal is portrayed a little later in many of the works of Gustav Freytag.)

within Prussia and, later, within the larger part of Germany, the railway system could not have developed with such rapidity, while, vice versa, railway development meant additional stimulus to further unification.\*

\*

\*

\*

When we look at the geographical distribution of industry in Germany we find two industrial centres: Saxony and Western Prussia. Western Prussia was prominent equally as a producer of heavy industrial and of consumption goods; Saxony, chiefly as a producer of textiles. Probably more than half of the total German capital invested in heavy industry was located in Western Prussia. Probably more than one-quarter of all German industrial workers in factories and mines were employed in Western Prussia. Of the total amount of new capital invested through joint-stock companies in Prussian mines and foundries between 1834 and 1849, 98 per cent was in Western Prussia.†

The western provinces of Prussia were the most densely populated of the whole of Germany, and the growth of cities was more rapid there than anywhere else. Almost one-third of all Prussian solid buildings (that is, those not built of wood or with wooden or straw roofs) were in Western Prussia.‡ This is sufficient to show that Western Prussia was the centre of gravity of the development of German industrial production. Under such conditions it is natural that the centre of capitalist strength in Germany was also situated in the West. The existence of coal and iron ore and of the transport artery of the Rhine; the historical tradition of textile production; the comparatively recent occupation of Western Germany by the progressive French

\* The marked disparity between the actual economic and political advantages gained by the German bourgeoisie is commented upon by Friedrich Engels (*Germany, Revolution and Counter-Revolution*): "Every political defeat of the middle class drew after it a victory on the field of commercial legislation. And, certainly, the Prussian Protective Tariff of 1818, and the formation of the Zollverein, were worth a good deal more to the traders and manufacturers of Germany than the equivocal right of expressing in the chambers of some diminutive dukedom their want of confidence in ministers who laughed at their votes."

Engels refers in the latter part of his statement to the fact that in some of the smaller states of Germany the bourgeoisie had succeeded in forcing on the semi-feudal princes some measure of "constitutional representation."

† *Jahrbuch fuer die Amtliche Statistik des Preussischen Staats*, I. Jahrgang.

‡ *Ibid.*, IV. Jahrgang.

in the beginning of the century, and the retention of a number of legal and other institutions of that period; all these and other factors combined to make of Western Prussia the most progressive section of Germany and, thus, the stronghold of the German and Prussian bourgeoisie.\*

While Saxony, the other industrial centre, without the backing of a large-scale heavy industry (though there was mining), and retaining but few vestiges of the short though impressive progressive French interlude, remained crippled in its political and social development,† Western Germany, Western Prussia, developed into a rapidly progressing capitalist region.

However, when we examine the political development of Prussia as a whole, its political institutions, the administration of the state, the composition of the higher officers' corps, legal procedure, education, and so on, we find that the centre of gravity is not in the West but in the East. The highest state officials, the highest army officers, the "cream of society," the Court circles, all derived from Eastern Prussia. The semi-feudal Eastern Prussian Junkers held the political power while the capitalists, with their centre of gravity in the West, were growing more and more powerful economically.

Prussian society, therefore, was heading for a clash between the progressive bourgeoisie and the reactionary semi-feudal Junkers. By 1847, forty years had passed since the last large-scale clash. After the defeats of 1806 and 1807, the Prussian bourgeoisie and the progressive sections of the nobility—much more equally distributed over the country as a whole than in 1847 but with a considerably weaker economic foundation, though aided by the fact of the defeat of the ruling Junker class in a war—had tried in vain to break the rule of feudalism. Some successes had been won: the partial emancipation of the peasants, a more democratic administration of cities, and a thorough reform of the army.‡

\* It is not surprising, therefore, that the two leading bourgeois ministers of Germany after the 1848 revolution, the Prime Minister of Prussia, Camphausen, and her Finance Minister, Hansemann, came from the Rhineland; nor that in the first *Kultur-Kampf* against the Rhenish Catholics in the thirties, the latter represented democratic tendencies against Prussian semi-feudalism.

† The semi-feudal guild system, for instance, remained in force in Saxony longer than in most other big German states.

‡ Cf. Franz Mehring, *Gesammelte Schriften und Aufsätze*, Vols. V and VI, and my *Freie Deutsche—Damals und Heute*.

But since the progressive forces did not at that time clearly visualize the means of winning through, did not realize the necessity of purging the state administration of reactionary elements,\* they not only failed to gain power but lost some of their achievements of the period from 1807 to 1813. In fact, the victory gained through the emancipation of the peasants turned into a severe defeat, for the following reasons. First, the emancipation of the peasants without the passing of protective legislation enabled the Junkers to drive hundreds of thousands of peasants from their homes, and with their land to swell the size and number of the large estates. Secondly, the creation of an agricultural proletariat and the partial dissolution of the guild system enabled the Junkers to develop special industries based on agriculture, chiefly and most profitably the production of alcoholic spirits, and thus to strengthen their economic position.† At the same time the economic, political and juridical powers of the Junkers over the peasants, as well as over the agricultural labourers, not only remained extremely strong but retained many of its semi-feudal features.‡ Therefore, the emancipation

\* See on this Franz Mehring, l.c. Vols. I, III, V, VI, and my *Ueber die Unpraktischkeit des Deutschen Intellektuellen*.

† J. S. Huwald, in his *Ueber Gewerbefreiheit und Gewerbeordnung* (Altona 1834), complains bitterly about the big landed estate owners who drive out of business the craftsmen in the country and who build industries of their own which grow even faster than those in the cities. As chief example he mentions: "For the owners of noble landed estates it is especially easy to produce spirits, as they actually do, in such amounts that they make more and send to the markets more than the towns and the inhabitants of villages."—Wilhelm Wolff, in his *Schlesische Milliarde* (*Gesammelte Schriften*, ed. by Franz Mehring), describes in detail how the big landowners made use of the destruction of the guild system in the food trades to arrogate to themselves the production and processing of foods (milling, for instance).—Friedrich Engels (*Der Status quo in Deutschland; Gesamtausgabe, 1. Abteilung*, Vol. 6) was right in more than one sense when he called the new type of big landowner an "industrial estate-holder." One of the first to try partial industrialization of his estate was Gneisenau, one of the great progressives in the Prussian army of 1807–1815.

‡ Wilhelm Wolff in *Das Elend und der Aufruhr in Schlesien* writes: "The institutions of gratuitous services to the lord of the manor, of money tributes and tributes in kind, of silver tributes, ground-money, dog-, oat-, yarn-spinning-, chicken-, geese-, egg-, broom- and watchman-money, remained in force." (*Gesammelte Schriften*.) The judicial and police powers of the big landowners resembled those they had before the emancipation of the peasants. Eduard Pelz, in *Die Verwaltung der Landgemeinden*, Breslau, 1845, writes that 15 strokes with a whip was regarded by a humane Junker as a medium punishment. The chief privilege and almost the only one which the peasants had won was freedom of movement.



of the peasants led in actual fact to a considerable strengthening of the position of the most reactionary section in Prussian society. Junkerdom had been forced by the events of the first decade of the nineteenth century to employ measures which, as they were not followed up by other and more far-reaching ones, not only failed to weaken the position of semi-feudal reaction but led to its renewed and vigorous growth. Such were the consequences of a change in social conditions which was not thorough-going, but stopped half-way.\*

When in 1848 revolutions broke out all over the Continent the German bourgeoisie was divided. The big bourgeoisie feared its own ally, the working class, and sided almost from the first day of the revolution in Prussia with the semi-feudal (but after all also semi-capitalist) Junkers. The medium and petty bourgeoisie, after the first days of resolute fighting, became undecided and fickle, for it contained large elements who felt themselves dependent for their trade upon the numerous royal and ducal courts and other state institutions, and was also opposed to real progress as it was still largely organized in semi-feudal guilds.† The working class was numerically small and politically immature, and unable to co-ordinate its action with that of the peasants.

Thus, we see that the capitalist bourgeoisie of Germany, and especially that of Prussia, failed twice within half a century to gain political power. Between 1807 and 1813 it was surprisingly immature and its economic basis was probably somewhat smaller

\* In Western Germany and in some parts of Southern Germany, agricultural conditions were different. While the peasants were poor everywhere, the larger estates were smaller and their power not always of such semi-feudal character. But agrarian semi-feudalism was by no means confined to Eastern Prussia.

† Friedrich Engels describes the situation and attitude of the lower middle classes in Germany at that time (*Germany, Revolution and Counter-Revolution*): "Its intermediate position between the class of larger capitalists, traders and manufacturers, the bourgeoisie properly so-called, and the proletarian or industrial class, determines its character. Aspiring to the position of the first, the least adverse turn of fortune hurls the individuals of this class down into the ranks of the second. In monarchical and feudal countries the custom of the court and aristocracy becomes necessary to its existence; the loss of this custom might ruin a great part of it. In the smaller towns a military garrison, a county government, a court of law with its followers, form very often the basis of its prosperity; withdraw these, and down go the shopkeepers, the tailors, the shoemakers, the joiners . . ."

than that of the French bourgeoisie in 1789. Both facts must be taken as an explanation; they are not historical excuses. In 1848, its economic basis was very strong as compared with that of the French bourgeoisie in 1789; at the same time it was politically mature enough to see what was at stake; but, not only because of conditions at home but also through the experience of the events of February, 1848, in France, it realized more clearly that its ally, the working class, was its future enemy. It lacked the stamina to make a stand on the basis of its own strength. It did not believe sufficiently in itself, and compromised by coming to an agreement with the Junkers as against the people, and really also against itself. By 1850, conditions existing before the revolutions were chiefly restored, with Western Prussia as the bourgeoisie capitalist centre of Prussia and Germany, and with Eastern Prussia as the political centre of gravity and the stronghold of German reaction.\*

## 2. LABOUR

The changes in the composition of labour in Germany during the first half of the nineteenth century were considerable because of the rapid growth of the population. They were unique in German history because of the rapidity of the transformation of labour's social character.

In the beginning of the century, practically the whole labour force consisted of serfs working under feudal bondage and of apprentices, journeymen and small masters, organized in the feudal guild system. In the beginning of the nineteenth century there were probably less than 50,000 factory workers, and perhaps half as many employed in mines† and quarries. It is impossible to give an estimate of the number of free agricultural

\* Engels, (*Germany, Revolution and Counter-Revolution*), writes: "The 'powers that were' before the hurricane of 1848 are again the 'powers that be.'" That is also one explanation for the observation made by Kohn-Bramstedt in his above-mentioned book (p. 47): "Of the different aristocratic types, the one that failed to adapt itself enjoys a surprisingly one-sided preference in literature between 1830 and 1870. Nowhere, so far as we have been able to discover, has the aristocrat who has succeeded in adapting himself to the market-economy and in becoming a business-magnate, been depicted in literature." The real representative remained, and rightly so, the politically and in high society firmly entrenched semi-feudal Junker.

† Some of them still bound by semi-feudal rules, then, as well as ten or twenty years later.

workers—on the royal estates in Prussia and in some principalities feudal servitude had been abolished. But it is probably too high an estimate to say that in 1800 the total number of unbound workers in town and country—that is of workers who were free to sell their labour and change their jobs—was roughly 250,000 in the whole of Germany.

It is difficult to-day to realize how strange and uncertain the institution of free labour seemed to many people in Germany in the first half of the nineteenth century. When later the conditions of the free workers became worse and worse, public discussion of their plight frequently centred around the question as to whether free labour should not again be abolished. For some reformers, the elimination of suffering meant the elimination of the proletariat. Pamphlets with the following titles were not unusual at that time: "How to Help Poor Orphans and Avoid the Growth of the Proletariat," or, "On Public Maintenance of the Working Class in Days of Illness and Suffering. A Means of Doing Away with the Proletariat . . .".\*

After the emancipation of the peasants, the vast majority of free workers was employed in agriculture as farm-hands, farm boys and girls, and as day-labourers, the latter usually with a small piece of land of their own. Though no accurate figures are available, it is probable that, after the emancipation of the peasants and the wars of 1813 to 1815, over 90 per cent of all German free workers were employed in agriculture.

The number of free workers employed by craftsmen was relatively small because, during the period under review, a great many apprentices and journeymen were still working under the guild system; the chief exceptions being in some regions in Western Germany and in the food trades (baking, grain-milling, etc.) in Prussia. In the factories and mines the workers were usually free. The following table gives a very rough estimate of the number of free workers in the most important non-agricultural occupations:

\* *Wie den armen Waisen geholfen, dem Proletariat vorgebeugt werden kann.* Anonymous. Berlin, 1845.—Eduard Liese, *Ueber öffentliche Versorgung der arbeitenden Volksklasse in Tagen der Krankheit und Not. Ein Mittel zur Beseitigung des Proletariats und als Beitrag zur Staats- und Medizinal-Reform.* Arnsberg, 1848. This is one of the earliest and most interesting writings dealing with the institution of a general social insurance system,

## EMPLOYMENT OF FREE NON-AGRICULTURAL WORKERS

IN GERMANY, 1800 TO 1848

<i>Period</i>	<i>Crafts</i>	<i>Factories</i>	<i>Mines*</i>	<i>Total</i>
1800	10,000†	50,000†	25,000	85,000†
1816	100,000†	100,000†	50,000†	250,000†
1832	125,000	250,000	75,000	450,000
1848	200,000	600,000	100,000	900,000

From 1800 to 1816 the rise was most rapid in the various crafts. This is only natural since, before the French occupation of parts of Germany and the consequent freeing of the apprentices and journeymen from the guild system, and before the local government legislation for towns in Prussia, the guild system was almost everywhere prevalent. After 1816 the rise in the number of free workers employed by small craftsmen was relatively slow because little progress was made in the freeing of workers. The number of factory workers increased between 1800 and 1816 by about 100 per cent. During the following decades this rate of increase was even higher. The rate of increase of workers employed in mines and quarries began soon to lag behind. From 1800 to 1810 this number probably rose by little less than that of factory workers; but during the following years it rose by 50 and 33 per cent as compared with 150 and 140 per cent in the case of the factory workers.

To the above must be added a relatively small number of workers in trade and transport. In 1800 many of them, especially those engaged in road construction, were not free. It is extremely doubtful whether the figure of free workers in the whole of Germany, engaged in non-agricultural work, reached the 100,000 mark in 1800. At the same time, it would not be surprising if the figure for 1850 was around a million.

The four chief sources of free labour during this period were: First, the emancipation of day-labourers on the countryside, that is of people with a little piece of land who had to find additional work in order to make a living, and who were ready to accept any kind of work in the neighbourhood of their cottages; and the emancipation of all the more permanently employed workers in agriculture. This source provided only one recruitment of free workers; it was no permanent source of growth. A more continuous source was the expropriation of small peasants by

\* Including Quarries.

† Probably less; these are maximum figures.

the big land-owners. A third source was provided by the fact that throughout Germany a gradually increasing number of apprentices and journeymen were being freed from the guild system, while many independent craftsmen, ruined by the competition of large-scale production, became proletarians. The fourth and by no means least important source of free labour was the growth in population.

While these sources released a considerable supply of labour, emigration, which was not inconsiderable in the forties, did not provide sufficient outlet to relieve temporary pressure on the labour market, which, as we shall see, was very marked, especially in the later years under review.

If we analyse the free labour supply according to sex and age, we arrive at the following conclusions.\* During the whole period from 1816 to 1850, roughly two-fifths of the male and one-quarter of the female occupied population aged 14 years and over were free workers. The percentage of workers employed as domestics or in more or less permanent agricultural employment (as farm-hands, etc.) was about the same for men and women, and declined slowly over the period under review. The percentage of day-labourers in the total adult population remained roughly the same over the whole period for men and women; the number of men being roughly 50 per cent higher than that of women. In the factories the number of women rose throughout the whole period. In 1816 about five times as many men were employed as women, thirty years later the men were only about three and a half times as many. In the mines and in the crafts the number of women was small.

During this entire period, the percentage of child labour increased, especially in the factories. According to official Prussian statistics, the proportion of children (boys and girls aged less than 14 years) in the factories was, in the forties, roughly 10 per cent of all factory workers. Actually, it was higher. In the beginning of the period it had been almost nil. Even higher than in the factories was the percentage of children among the workers engaged in home industries. Here, in the thirties and forties, it may have reached 25 per cent or even

\* The best statistics available are those for Prussia. (Cf. *Jahrbuch fuer die Amtliche Statistik des Preussischen Staats*, II. Jahrgang.)



more in some industries and parts of the country. Engels reports\* that in Elberfeld 1,200 out of 2,500 children of school age did not attend school but "grow up in the factories only in order to relieve the factory owner from paying an adult worker, whose place they take, double the wage he gives to the child." Schnee† tells us that in the forties in the Silesian linen industry (home work) children began work at the age of four. In some factories the entrance age had already been five in the twenties; in the county of Geldern children aged three were found in textile factories.‡ The usual age for children to start work as domestics was nine.§ How varied the occupations of children were, becomes obvious from another study of Schnee's in which he says: "It is no rare occurrence to-day that children below the age of 14 are either used as prostitutes or are systematically educated for this as their future profession.||

The development in this respect was no different in Germany from that in other countries. In Germany, as in Britain and the United States,¶ the first half of the nineteenth century saw the forcing of women and children into the factories, mines and capitalist home industries.

### 3. WAGES AND PURCHASING POWER

Our information on the wages and purchasing power of the German workers during the first half of the nineteenth century is very meagre. Though there exists a certain amount of wage data dealing with isolated cases this is often without value to

\* *Briefe aus dem Wuppertal*, published in *Telegraph fuer Deutschland*, March, 1839. *Gesamtausgabe*, 1. Abteilung, Vol. 2.

† Alexander Schnee, *Ueber die Not der Leinenarbeiter in Schlesien und die Mittel, ihr abzuhelpfen*. Berlin, 1844.

‡ See unpublished reports by the county (Kreis) administrations for Duesseldorf (1823), Iserlohn (1825) and Geldern (1825) to the Prussian Ministry for Religious, Educational and Medical Matters, quoted by Guenther K. Anton, *Geschichte der preussischen Fabrikgesetzgebung bis zu ihrer Aufnahme durch die Reichsgewerbeordnung*. Leipzig, 1891.

§ Cf. for example Otto Hintzke, *Mittel zur Begrueundung und dauernden Befestigung des materiellen und geistigen Wohles der arbeitenden und gewerbetreibenden Klassen der menschlichen Gesellschaft*. Marienwerder, 1848.

¶ Alexander Schnee, *Ueber die Zustaende der arbeitenden Klassen in Breslau*. Berlin, 1845.

¶ See Chapters I, Vol. I and II of this *Short History of Labour Conditions under Industrial Capitalism*.

us, since we do not know to how many workers they apply, and since they cannot be co-ordinated or related to similarly isolated wage quotations for other industries or years.

### WAGES IN GERMANY, 1820 TO 1850

(1900 = 100)

<i>Year</i>	<i>Building</i>	<i>Metals</i>	<i>Textiles</i>	<i>Wood-working</i>	<i>Printing</i>	<i>Mining</i>	<i>Agriculture*</i>
1820	—	—	—	—	—	39	—
1821	—	—	—	—	—	41	—
1820-21	—	—	—	—	—	40	—
1822	—	—	—	—	—	41	—
1823	—	—	—	—	—	41	—
1824	—	—	—	—	—	42	—
1825	—	30	—	—	—	43	—
1826	—	—	—	—	—	42	—
1827	—	—	—	—	—	42	—
1828	—	—	—	—	—	43	—
1829	—	—	—	—	—	43	—
1820-29	—	—	—	—	51	42	36
1830	—	—	—	—	52	43	—
1831	—	—	—	—	52	44	—
1830-31	35	—	—	—	52	44	—
1832	—	—	—	—	52	43	—
1833	—	31	—	—	52	45	—
1834	—	—	—	—	52	44	—
1835	—	—	—	—	52	44	—
1836	—	—	—	—	52	44	—
1837	—	—	—	—	52	45	—
1838	—	—	—	—	52	46	—
1839	—	—	—	—	52	47	—
1830-39	36	36	34	33	52	45	41
1840	41	—	—	—	52	49	—
1841	41	—	—	—	53	48	—
1842	41	—	—	—	53	50	—
1843	40	—	—	—	53	50	—
1844	40	47	—	—	53	50	—
1845	40	45	—	—	53	50	—
1846	40	47	—	—	53	52	—
1847	41	47	—	—	53	55	—
1848	44	51	—	—	58	51	—
1849	44	46	—	—	58	53	—
1840-49	41	—	36	37	54	51	—
1850	44	43	—	—	58	54	39

In the course of this study I have made use only of wage data which are comparable at least for five years, so that a

\* Including Forestry.

certain minimum of coherency is ensured in our survey. The table on page 28 gives wage indices for all those industries for which it was possible to construct them.\*

This table is even more meagre than our wage data; for in some cases we have a number of wage sets covering five or more years but are unable to connect them with each other.† Yet even if this table were complete and covered the whole country and all industries, it must be kept clearly in mind that wages are only one of many factors determining the workers' standard of living and its development. Many other factors must be studied before we are able to draw any definite conclusions as to the level of living and working conditions of the workers, and any changes in it.

It is, of course, impossible to compute from this a general wage index, showing development year by year. We can at best give ten-year averages which are no more than rough estimates. From 1844 on, however, I think it is possible to give annual general wage figures.

#### AVERAGE GROSS MONEY WAGES, 1820 TO 185

(1900 = 100)

<i>Period</i>	<i>Industry</i>	<i>Industry and Agriculture</i>
1820-1829	36	37
1830-1839	38	41
1840-1849	42	43
1844	43	44
1845	43	44
1846	43	44
1847	44	45
1848	47	45
1849	45	43
1850	45	43

Our first impression from a scrutiny of these figures, is that wages have moved pretty slowly and have had a tendency to increase.

But we must not forget that these are gross wages, usually for

\* For individual wage data and methods of construction, see Appendix to Chapters I and III.

† In the Appendix to Chapter I, I give also those wage data which cover five or more years, but which could not be used in the construction of the wages indices.

a full day or a full week. They do not take into account changes in the number of hours worked per day and in the number of days worked per week. They do not allow us to see that in some years the workers made much less because of unemployment, and that, over the period as a whole, the workers had to work a continually increasing number of hours per day in order to earn their daily wage, and more hours and even days per week to earn their weekly wage. Furthermore, and this is highly important, they do not take into account changes in prices.

But the above are only a few of many factors omitted in these figures; there are also the fines deducted from wages, the relative increase of prices under the expanding truck system,\* and so on, which the above figures neglect. Nothing could be less correct than to assume that during the period under review the actual wages earned by the workers had remained fairly stable, with a slight tendency to increase.

Moreover, the heading of the table is not quite correct. It says "average gross money wages," the word "gross" rightly indicating that a considerable number of items must be deducted before we arrive at a net wage. But the word "average" is right only in so far as the wages cover a sufficient number of occupations and industries to warrant the use of the term. But this index does not adequately cover the changes in the proportion according to sex and age of the workers employed. If the above were an index of wages paid to all sexes and ages of workers, it would show a considerable decline because of the absolutely and relatively growing number of women and children employed. On the other hand, there was a certain increase in the wages earned per family, because more members of the family, even small children, were forced to go to work.

Of course, even gross wages—even if not taking into account the factors I have mentioned—are not quite as rigid as the above tables indicate. The following amusing instance will suffice to illustrate this. When investigating the wages of Krupps' workers in the eighteen-forties I found almost no change between 1846 and 1847 although conditions had considerably worsened in the latter year. When I wrote to Krupps about this in 1934 and

\* That is, the partial payment of wages in kind; or the institution of company shops where the workers had to buy even if they were paid in money.

suggested that something must be wrong about the figures they replied that they were correct and that they clearly indicated that the Krupps were progressive and socially-minded people even in 1847, just as they now were under Hitler's régime! Further investigations gave me the clue to the real facts: during the crisis the philanthropic Krupps had dismissed most of their unskilled workers and had cut the wages of the skilled; thus the average wage of 1847 referred to a much higher percentage of skilled workers than that for 1846.

In studying the conditions of labour under industrial capitalism it would be of great value to have at least a rough idea of annual family earnings, taking into account losses through unemployment, short time, strikes, sickness, and so on, and also taking into account increased earnings through the employment of a higher percentage of the family. Such data would also enable us to study in more detail the employers' policy of lowering men's real wages in order to force them to send their wives and children into the factories\*; and to note how, after an initial increase in a family's earnings, perhaps by sending an eleven-year-old boy into the factory, they were again depressed, so that the eight-year-old daughter had to work in the mill.

\* \* \*

In order at least to take into account fluctuations in prices, we shall now investigate the development of real wages. While our knowledge of wages is poor, we have better data on some of the factors which make up the cost of living. We have fairly decent data on food prices, and can make at least some rough estimates of rent. An index of the cost of living, composed of these items, is given in the table on page 32. †

While we noted when first glancing at the wage table the apparent relative stability of wages, we are now struck by the extraordinary fluidity of prices or cost of living. During the period under review the cost of living fluctuated by over 100 per

\* This policy could also be observed, of course, in Britain and elsewhere at that time (see Vol. I of the *Short History*, p. 44, and Vol. II, p. 23). Alexander Schneer, *Ueber die Not der Leinenarbeiter in Schlesien und die Mittel, ihr abzuhelpfen*, writes: "The very low wages compelled parents to employ the feeble strength of children, as young as four years of age, for lighter work."

† For more detailed figures and sources see Appendix to Chapter I.



## COST OF LIVING, 1820 TO 1850

(1900 = 100)

1820	49	1830	50	1840	53
1821	43	1831	57	1841	52
1822	44	1832	54	1842	55
1823	45	1833	52	1843	58
1824	36	1834	45	1844	53
1825	35	1835	46	1845	57
1826	39	1836	45	1846	68
1827	46	1837	46	1847	79
1828	47	1838	52	1848	57
1829	48	1839	54	1849*	50

cent between its low in 1825 and its high in 1847; between 1844 and 1847 it increased by roughly 50 per cent, only to decline by more than one-third in the following two years. While gross money wages do not reflect the rapid changes in the general state of business, prices and cost of living are a fairly sensitive barometer.

The following table indicates the development of gross real wages for all workers:

## AVERAGE GROSS REAL WAGES FOR ALL WORKERS

(1900 = 100)

<i>Period</i>	<i>Wages</i>
1820-1829	86
1830-1839	82
1840-1849	74
1844	83
1845	77
1846	65
1847	57
1848	79
1849	86
1850	88

This table shows that, over the period as a whole, real wages had a tendency to decline. This should not surprise us. We find the same phenomenon in Great Britain in the early stages of capitalism.† It is characteristic of the policy of early capitalism to use the methods of what can be called primitive exploitation: lowering real wages, lengthening the working day and employing more women and children; that is, the employment of cheaper labour.

\* In 1850 the index is 49.

† Cf. Vol. I of this *Short History of Labour Conditions*, pp. 39 ff.

We also discover that real wages fluctuated considerably and that during the crisis their fall was very rapid. However, the above table does not show the full decline in real wages. If, for instance, we could only take into account unemployment, we would find that real wages in 1847 were probably about half of what they were three years earlier or three years later.

\* \* \*

Before concluding this survey of wages during the first half of the nineteenth century it will be interesting to compare wage levels in various industries. The following table gives some relatively comparable figures. They all refer to weekly wages; where my original source gave daily wages I multiplied the original by six.

#### WEEKLY WAGES IN INDIVIDUAL INDUSTRIES

(*In Marks and Pfennigs*)

<i>Industries and Occupations</i>	<i>In the 1820's</i>	<i>In the 1840's</i>
Masons .. ..	6.50*	8.50 to 10.50†
Metal Workers .. ..	5.40‡	8.25‡
Textile Workers .. ..	above 7.20 to 10.50§	7.20 to 12.00§
Printers .. ..	8.80	8.80
Miners, Coal .. ..	9.00¶	11.00¶

None of these figures can be taken as representative of their industry as a whole. Yet, they are significant because they show that even such random figures—which have come down to us through the lucky accident that some people have preserved them or have succeeded in digging them out from old company books—show a striking similarity. The textile industry (as far as its factories are concerned) does not stand out as it would to-day, for paying especially low wages,\*\* nor the metal industry for paying rather more than the average.

\* Esslingen.

† Leipzig and Rostock.

‡ Krupp.

§ Wuerttemberg and Saxony (Meerane).

|| Halle.

¶ Saar territory.

\*\* This refers only to textile workers employed in factories. If we include workers employed in home industries, then the standard of the textile worker as a whole has declined as compared with that of the workers in other industries, while, for instance, that of metal workers has improved, since the amount of (capitalistically directed) home work was not so large in the beginning, and was—in contrast to the textile industry at that time—eventually absorbed by the factories. The relative slowness in the decline of the relative position of textile factory workers as compared with other factory workers in Germany—

The relative decline of wages in the textile industry, which at that time had already taken place in Britain, was to come later in Germany. Even if we take the fluctuations of the cost of living into account, the differences in wages were probably greater at that time by localities than by industries—with the exception perhaps of the home industries, which paid incredibly low wages everywhere, and of agriculture; though it is difficult to get an accurate picture of wages in this latter branch because of the important factors of payments in kind and cheap (although extremely poor) housing.

This general uniformity of wages in different industries is not so surprising if we realize that the wages of even the best paid workers were extremely low, and, consequently, those of the lowest paid could not be driven much lower without endangering the productive capacity of labour more than could be desired, even at a time when labour was in considerable supply.\* If we had better wages material than I have succeeded in gathering, I would not be surprised to find that wages, in the very early years of German capitalism (when the real wage level was higher than in the thirties and forties), varied more from industry to industry than, for instance, in the forties.

In conclusion, we may say that the development of wages during the first 50 years of German capitalism was from every point of view most unfavourable for the working class.

#### 4. LIVING CONDITIONS

The preceding pages will, I trust, give a rough picture of the development of wages and purchasing power. They show that purchasing power declined over the period under review. But they do not give us a rounded conception of the living conditions of the workers. There is a great difference, for instance, between a decline in the standard of living of a successful employer and that of a worker; there is even a considerable difference in a decline in the standard of living of skilled and unskilled workers.

in contrast to Great Britain, for instance, and France—can probably be explained by the slow development of mechanization of the production process in the textile industry.

\* The large-scale destruction of labour power, such as we can observe it in periods of abundance of labour in slave society or under Fascism, was not usual in the early period of capitalism.

We can go even further: there is a marked difference between the decline in the standard of living of an unskilled worker at the beginning of an economic crisis and just towards its end. In each example I have mentioned, however, the decline means more suffering. It is necessary, therefore, to study in more detail the living conditions of the workers in the period under review, and especially their standard of living at the end of the period, when conditions reached a record low in the history of the free worker under early German capitalism.

While our information is scanty for the years preceding 1840, it is sufficient to give us an insight into living conditions, especially as a number of writers on conditions in the forties make occasional references to former periods.

As in all other countries, the standard of living of German free workers was a very low one in the beginning of the nineteenth century. Even Dieterici\* (who has difficulty in combining praise for the extraordinary progress made under the current monarch with praise for the monarch's forefathers, under whom conditions obviously cannot have been quite so wonderful, because otherwise no progress could have been made) writes on conditions in the countryside in the beginning of the nineteenth century: "the agricultural population in 1805 was in a very poor situation." As to the factory workers, Krug† refers to the straitened conditions under which they had to live. Living conditions of miners, particularly housing, were so poor in some parts of Germany that a scarcity of labour developed as the workers sought other employment.‡ The poverty of the living conditions of apprentices and journeymen employed by master-craftsmen is attested by Schmoller§ and numerous other observers. And yet—conditions seemed tolerable or even fairly good to those who in 1840 or 1850 looked back upon past years.

Lint|| is right when he remarks: "50 or 60 years ago it was

\* *Der Volkswohlstand, etc.*

† L.c.

‡ See, for instance, the report of the Bergamt Tarnowitz in Upper Silesia, dated January 4, 1818 (quoted in *Einrichtungen zur Hebung des materiellen und geistigen Wohles der Arbeiter auf den Königlich Preussischen Berg-, Hütten- und Salzwerten*, *Zeitschrift für das Berg-, Hütten, und Salinen-Wesen in dem Preussischen Staate*, 21. Band, Berlin, 1873).

§ *Zur Geschichte der deutschen Kleingewerbe im 19. Jahrhundert*. Halle, 1870.

|| J. G. Lint, *Ueber Sicherung der arbeitenden Klasse gegen die Übermacht des Kapitals*. Leipzig, 1848.

impossible to envisage the present conditions of the working class." For during the first years of factory production the workers were at least sure of their work, were sure to bring home their weekly wage, even though it was insufficient; and unemployment was rare.\* Furthermore, the factory worker at that time was generally a relatively skilled worker, and as such enjoyed a somewhat favoured position. Conditions of apprentices and journeymen were, to a much higher degree than in the forties, determined by the standard of living of the master-craftsman who employed them. They usually had their meals with the master's family; they slept in the master's house; and even if their room was small and inferior to that of the master, this ensured a certain standard of housing.† Even the Junkers—who went all out to grasp the advantages offered by the emancipation of the peasants and their consequent right to employ them as labourers and to rid themselves of the necessity of providing food and shelter for old farm help and domestics—did not at once avail themselves of this to any large extent.

All this changed in the course of a few decades. Living conditions among the agricultural workers deteriorated rapidly. The surplus of labour, the creation of labour reserves in the agricultural districts, and successful Junker competition against the small craftsmen, enabled the agricultural capitalists to lower the standard of living of the agricultural workers. A campaign to popularize the consumption of spirits (distilled by the Junkers), which extended also to the urban industrial workers, contributed to the undermining of the standard of living. While the consumption of beer and spirits was almost nil in agricultural districts in the beginning of the century,‡ the drunkenness of

\* L. Buhl, *Andeutungen über die Not der arbeitenden Klassen und über die Aufgabe der Vereine zum Wohl derselben*, Berlin, 1845, writes: "The fact that no use can be made of the capacity and the desire to work, that is the existence of labour forces of which the society can make no use, is a phenomenon not known formerly."

† J. G. Hofmann, in *Die Macht des Geldes, Eine Untersuchung der Ursachen der Verarmung und des sittlichen Verfalls so vieler unserer Mitmenschen nebst Mitteln zur Abhilfe*, Leipzig, 1845, contrasts former conditions with those prevailing in the forties as follows: "It is much cheaper and easier to throw journeymen out of the house than to keep them. In the house it is not possible to feed them as badly as they now often have to eat; nor could room and bed be so poor."

‡ See, among others, Dieterici, l.c.



workers on pay-day was as customary now in the country as in the town, the chief difference between the two being that in the towns the percentage of drunken women and children was higher because more of the women worked outside the home and received wages.

The position of apprentices and journeymen employed by small craftsmen deteriorated chiefly because of a worsening of the position of the masters. The competition of factories and sharper competition among themselves forced more and more of them out of business.\* There was generally a remarkably clear recognition of the fact that increased competition was the chief cause of the decline of the independent craftsman. When Friedrich Engels, in a speech at Elberfeld in February, 1845,† said: "The ruin of the lower middle class [that is, of the independent craftsmen—J. K.] . . . is an inevitable result of the advantages which the big capitalist has over his less propertied competitors," he did not expect to startle his hearers with a new theory but rather wanted to re-state and re-emphasize a knowledge, gained by many of them through their own bitter experience.‡ Even more sharply, an address by the craftsmen of Bremen to the Committee of 50 in Frankfort-on-Main describes their unhappy position.§ "Look at the gigantic abyss of the Proletariat! One more step on this way and the independent

\* Ferdinand Oesterley writes as early as in 1833: "In the sixteenth century there were 800 weavers in Göttingen, in 1795 only 115 weaving looms remained, and to-day there are only 60 clothmakers, most of whom have no work. The majority of the metal workers has . . . also suffered severely from the factories." (*Ist es ratsam, die Zunftverfassung aufzuheben?* Göttingen, 1833.)

† *Gesamtausgabe, 1. Abteilung, Vol. 4.*

‡ The problem of competition played an increasing rôle in German literature dealing with general economic conditions, and pamphlet titles like the following were not unusual: Karl Vollgraff, *Von der ueber und unter ihr naturnotwendiges Mass erweiterten und herabgedruckten Konkurrenz in allen Nahrungs- und Erwerbszweigen des buergerlichen Lebens, als der naechsten Ursache des allgemeinen, alle Klassen mehr oder weniger drueckenden Notstandes in Deutschland, insonderheit des Getreidewuchers, sowie von den Mitteln zu ihrer Abstellung.* Darmstadt, 1848.

§ *Adresse des Bremer Handwerker- und Gewerbestandes an den 50er Ausschuss zu Frankfurt am Main*, quoted from *Hochwichtiges der Gegenwart in 7 Bildern betreffend die gegenwaertigen gedruckten Verhaeltnisse des Mittelstandes, naemlich: die Handwerker und Arbeiter, sowie des Handels und aller Gewerbe in Deutschland, und wie diesem wichtigen Stand des deutschen Volkes geholfen werden kann. Zusammengestellt und vorgetragen von einem Mitglied des Gewerbe-Vereins zu Dresden.* Dresden, 1848.

craftsman is lost beyond help as the backbone of the lower middle classes.”\*

In part, the conditions of the factory workers grew worse for reasons valid also in Britain and the United States,† but also in part because of the backwardness of German industry. Competition on the foreign market and the relative technical stagnation in German factories made the German employer rely more and more for a secure flow of profits on the brutal exploitation of his workers. While the poor quality of the German factory owner's goods caused him often to be beaten on the world market, he surely beat all his competitors in the barbarity of his methods of exploitation. In fact, it became not unusual for employers in other countries to defend particularly harsh methods of exploitation by pointing to the German methods which, they claimed, were so much more drastic that they enhanced the threat of German competition.‡

Thus, conditions in Germany deteriorated for the great mass of the people, partly for reasons effective in all countries going

\* This clarity regarding the rôle of competition did not mean that the lower middle class realized equally well that the state supported the growing big bourgeoisie against the small man. This is very clear from the following quotation from a pamphlet, entitled *Entwurf einer allgemeinen Handwerker- und Gewerbe-Ordnung fuer Deutschland. Beraten und beschlossen von dem deutschen Handwerker- und Gewerbe-Kongress zu Frankfurt am Main in den Monaten Juli und August, 1848. Mit einem Anhang: Mittel zur Hebung des deutschen Handwerker- und Gewerbebestandes.* Hamburg, 1848. The first sentence of the preface reads: “The question whether we should have freedom of trade or protection of trade has so far been answered differently by the statesman and by the expert. The former seeks a source of wealth in the greatest possible freedom, from rules and of movement, of the producer and trader; the expert, on the other hand, knows and experiences on himself how unlimited freedom creates a tyranny of the individual, of the capitalist against the mass, and how it gives to the individual what is taken from the total of those who have a right to it.”

† See Chapters I of this *Short History of Labour Conditions*, Vol. I and Vol. II.

‡ The most famous example of this was the use of such arguments by British employers in opposition to a shorter working day and Macaulay's answer (*Speeches of Lord Macaulay, Corrected by Himself*, London, 1866, *Speech on the Ten-Hour Bill*, May 22, 1846): “You try to frighten us by telling us that, in some German factories, the young work seventeen hours in the twenty-four, that they work so hard that among thousands there is not one who grows to such stature that he can be admitted into the army; and you ask whether, if we pass this bill, we can possibly hold our own against such competition as this? Sir, I laugh at the thought of such competition. If we ever are forced to yield the foremost place among commercial nations, we shall yield it, not to a race of degenerate dwarfs, but to some people pre-eminently vigorous in body and in mind.”

through the phase of early industrial capitalism, and partly because of the relative backwardness of German industry and the coincidence of the emancipation of the peasants with the development of factory capitalism.

With very few exceptions,\* there is not the slightest doubt among contemporary as well as later writers that the standard of living of the German workers, between the beginning and the end of the period under review, deteriorated very considerably. One could quote hundreds of authorities on this: employers, workers, priests, physicians, writers, and even the Prussian king. In fact, for the first time in modern German history—and the last, until the years following the 1914–1918 war—a mass of publications appeared, at the end of the thirties and during the forties, taking as their starting-point the fact of mass poverty and studying the means by which the conditions of the people might be improved. Most of these writers—and those I am thinking of here and from whom I shall quote are not “political” writers in the sense that they intended to rouse the people against the ruling class—realize that this impoverishment of the masses of the people was taking place while the rich were growing much richer. J. M. Maier, a minister, an inspector of schools, and a high official in the administration of Bavaria, writes:† “In the course of time, through various causes working together, a crying disparity has developed between the possessing and the non-possessing, between capital and labour; during this time, some groups and classes have gained such predominance over others that the natural existence of the latter seems in danger.” From the West, from Frankfort-on-Main, comes a pamphlet stating:‡ “The complaint of the continued pauperization of whole classes of society, while the national wealth is undoubtedly

\* Among them of course, Dieterici, who says in his *Volkswohlstand*, etc., that he would be happy if his book would convince people that the wise government of Prussia has succeeded in improving the conditions of the people. One of his proofs is the increase in consumption of various commodities per head of the population. G. J. Lint, l.c., answers such computations with the biting argument that the Silesian weavers would be only too happy if “their heads were sugared in the same way” as those of the gentleman who prove an increase of the consumption of sugar and the growing welfare of the poor by such average computations.

† *Die Not der untersten Volksmassen und ihre Abhilfe*. Erlangen, 1849.

‡ Friedrich Schmitthenner, *Ueber Pauperismus und Proletariat*. Frankfurt am Main, 1848.

increasing, is heard to-day everywhere, and it needs only one glance into real life in order to convince one of its justification." Finally a warning from Saxony:\* "The farmer has his barn full of corn, the manufacturer his storehouse full of commodities; both produce more than formerly was produced with the same means and forces, and yet the number of those who suffer from want of food and clothing is on the increase."

A number of writers have, however, gone further than these general remarks and have attempted to compute for various years a cost of living minimum and to compare this with actual average wages. Bernhard Werner,† for instance, arrives at a cost of living minimum for 1844-1845 for a day-labourer with wife and one child in the Rhine district, amounting to 227 Florins. Assuming full employment during the whole year, he arrives at a yearly wage of 150 Florins for the best paid day-labourer, while day-labourers do not receive more than 120 Florins on the average, that is, only little more than half the minimum deemed necessary for existence. Dr. Bernhardt‡ sets the minimum cost of living for 1846 for a worker, his wife and two children, at 2 Thaler 4 Sgr. per week, while his income, he says, amounts only to 1 Thaler 22 Sgr. and 6 Pf., that is about 80 per cent of the minimum—if the worker works full-time; in the case of factory workers who are working over-time, a wage of 2 Thaler is sometimes reached, he states; but this is also below the minimum. Schnell estimates a cost-of-living minimum of 174 Thaler for a family with three children in 1848-1849, and remarks that actually the workers earn less. "Only as an aside," he continues, "we wish to state here that, according to the budget of some German states, 100 Thaler are paid annually for the maintenance of a horse in state service, while, in the case of post horses, according to local circumstances, it is often even 200 Thaler—on the whole, therefore, more than a free worker and his family are usually able to earn."§

\* J. G. Hoffmann, l.c.

† *Das Armenwesen, sein Ursprung und die Mittel zur Abhilfe, ein Beitrag zur Erklrung der Not der Armen*. Darmstadt, 1845.

‡ *Der Handarbeiterstand und sein Notstand, nebst einer gelegentlichen Eroerterung der diaetetischen Bedeutung und bedingungsweisen Notwendigkeit des Branntweins in gewissen Staenden und Verhaeltnissen*. Eilenburg, 1847.

§ Karl Ferdinand Schnell, *Vorschlaege zur Verbesserung der Arbeiterverhaeltnisse, namentlich auf dem Lande*. Berlin, 1849.



J. J. Dittrich\* computes for 1846 an existence minimum of 174 Thaler for a family of five, and total earnings for a 360-day working year of 144 Thaler only.†

If we now take in detail the chief items of living—food, clothing and housing—realizing that the whole of the earnings are rarely enough to provide for everything sufficiently—we are not surprised to note a serious deficiency in one, two or all three of these items.

In his account of food conditions among the workers in England, Friedrich Engels‡ describes a descending scale of misery “until, on the lowest round of the ladder, among the Irish, potatoes form the sole food.” In Germany at that time, there was probably a much larger part of the population living on this low food level. Wilhelm Wolff in his *Schlesische Milliarde* says of the agricultural workers that their food “consists almost exclusively of potatoes and spirits.”§ Schneer finds among the Silesian linen weavers|| that meat appears on the table of only a few, and then only at Easter, Whitsun and Christmas—and this statement is further qualified by his adding, “and even in these few cases and at these few occasions, only about half a pound for five to six persons.” Ernst Fabri¶ makes the German reader’s mouth water with a description of rations in English workhouses, and then adds: “How many day-labourers, peasants, even craftsmen’s families, would be happy in Germany if they had such food year in and year out!” In fact a comparison with English workhouses must seem incongruous to some who regard a comparison with German prisons as more appropriate. Schneer says:\*\* “Not a small number of the inhabitants of the province which is called the pearl in the crown of Prussia [Silesia—J. K.] lives far worse than convicts in the prisons.” But to some even the food of a civilian convict in a German

\* J. J. Dittrich, *Unsere Uebergangszeit betreffend die Erloesung des Proletariats durch die Organisation der Arbeit und des Armenwesens und durch die Konzentration der Hilfen des Staats, der Gemeinden, der Vereine und der Proletarier selbst*. Breslau, 1847.

† Very interesting material is contained also in an article by Dr. Fr. Dael, *Ueber die Arbeitsloehne der handarbeitenden Volksklassen in Rheinhessen*, *Zeitschrift des Vereins fuer Deutsche Statistik*, 1. Jahrgang, 1847, pp. 840 f.

‡ *The Condition of the Working-Class in England in 1844*.

§ *Gesammelte Schriften*.

|| Alexander Schneer, *Ueber die Not der Leinenarbeiter, etc.*

¶ *Der Notstand unserer Zeit und seine Hebung*. Erlangen, 1850.

\*\* L.c.



prison seemed an unsatisfactory comparison. Wilhelm Wolff in his study, *Das Elend und der Aufruhr in Schlesien*, quotes an appeal, signed by a minister, a police official and a minor court official, saying that "the manner of living" of "every military convict appears incomparably more desirable because of their freedom from care . . . than that of a weaver."\* A foreign observer, the British Consul in Danzig, gained a similar impression and reported: "As to the comparative condition of these self-supporting labourers and of paupers maintained in the public institutions, with regard to their food, that of the latter may generally be, although meagre, rather better than that of the former."†

The rapid increase in the consumption of spirits is related partly to lack of food and to a certain extent also to lack of clothing. Engels describes a late evening in the Wuppertal:‡ "All the taverns are overflowing, especially on Saturday and Sunday, and in the evenings at eleven when they are closed the drunken people come out of them and usually sleep off their intoxication in the ditches." He sees as the reason for this widespread drunkenness degrading working and living conditions. A considerable number of writers on this subject connect the rapid rise of spirit consumption with the growing poverty of the masses. Wilhelm Wolff§ remarks that spirits "replaced the meat, beer and wine of the rich, and often also the bread." Dr. Bernhardi|| finds that spirits are used to replace the calorific value of food which the workers cannot buy, and an anonymous writer rightly remarks that poverty is not due, as some say, to demoralization through drink but that, on the contrary, the increased drinking is due to the demoralization arising from poverty.¶

\* *Gesammelte Schriften*.—It should be added in parenthesis that we know of numerous cases at that time of people in England trying to gain the privilege of admission to prison because this would provide them with a minimum of food—that official publications in the British colonial empire to-day or in India admit that prisoners are better fed than natives in freedom—and that during the last crisis it was nothing extraordinary for an American to smash a window or bite a policeman in order to find food and shelter in prison.

† See *Parliamentary Papers, Reports from Commissioners, Poor Laws, Appendix F, Part II, Session 4 February to 15 August, 1834*.

‡ *Briefe aus dem Wuppertal*, l.c.

§ *Das Elend und der Aufruhr in Schlesien*.

|| L.c.

¶ *Die sittliche Hebung der unteren Volksklasse. Mit besonderer Ruecksicht auf das Landvolk und die Maessigkeitsvereine*. Koenigsberg, 1845.

With regard to clothing, Schnee's oft-mentioned study on conditions among the Silesian weavers states: "For the last seven years or more these unfortunates have been unable to procure a single piece of clothing." And Dr. Bernhardt\* says the workers' clothing "usually serves only the most primitive desire for covering; it differs little between summer and between winter; winter clothing either does not exist at all, or, if a warm piece of clothing for the colder period of the year is available, this also serves in the cooler summer days."

Much material is available on housing. Conditions were probably not as bad as in the United States in the fifties or sixties, but were probably similar to those in Britain.† Reading Hoffmann's‡ remarks on housing conditions on the German countryside: "Does one not find rooms, compared with which the stable has more and cleaner air and light?" one is reminded of Cobbett's observation:§ "Their dwellings are little better than pig-beds, and their looks indicate that their food is not nearly equal to that of a pig." In his description of *Die Kasematten* in Breslau, Wilhelm Wolff|| writes of rooms inhabited by nine to thirteen children and five to seven adults.

G. S. Liedtke,¶ describing conditions in Berlin during the thirties, already mentions five to seven persons sleeping "on one resting-place made of some unpolished boards, held together like a plank bed, covered only with a little fusty straw with some rags spread over it." Schnee, in his study of the conditions of the workers in Breslau, devoted special attention to the housing problem and consulted a number of physicians and social workers. The city poor physician, Dr. Bluemner, answered his question on housing conditions as follows: "They are miserable to the highest degree. Some rooms resemble more a pig-sty than a room for human beings. . . . The rooms are small and so low that it is barely possible to stand up in them; the floor is uneven. . . . Water usually runs down the doors and walls." Another physician answered him: "The rooms are bad and

\* L.c.

† See this *Short History of Labour Conditions*, Vol. I, pp. 47 f. and Vol. II, pp. 54 ff.

‡ L.c.

§ *Gesammelte Schriften*.

¶ *Hebung der Not der arbeitenden Klasse durch Selbsthilfe*. Berlin, 1845.

§ *Rural Rides*, November 7, 1821.

expensive—that is the simple answer.” When asking about the average number of persons per room Schneer was told: “In some rooms there are seven, eight or more persons, as many tenements are inhabited by two or three families; in some there are fewer; it is difficult to arrive at an average figure.”

Such was the standard of living of the German worker in the forties. It may be useful to add some testimony referring to the standards of various categories of workers.

Of the journeyman, Hofmann\* says: “Often he has not enough to eat nor is he able to get a warm place to sleep or a room.” An anonymous writer† summarizes the life of the domestics: “Not a few domestics can say with Jacob (*The First Book of Moses*, Chapter 31, Verse 40): ‘In the day the drought consumed me, and the frost by night; and my sleep departed from mine eyes.’”

Of the conditions of families who do industrial home work an employer‡ (after praising conditions among factory workers) says that they fill one with “a strange sense of horror and deep sympathy.” Of the day-labourers Hintzke§ remarks that “the small daily wage they earn by their labour is not even sufficient to enable them to live like human beings while they have work—and they have not always work”; while Eduard Pelz, speaking specifically of agricultural workers, says that they work “for a wage which just permits the satisfaction of the primary, most material needs of life.”|| The number of comments on the condition of factory workers is very large. Some have been quoted before. It is sufficient here to add one more, by an employer. Kommerzienrat Gustav Delius from Bielefeld, when attending a conference of industrialists in Berlin at the Office of Trade (*Verhandlungen beim Handelsamte*, March 31 to April 4, 1845), remarked regarding conditions in the Westfalian linen industry: ¶

\* L.c.

† *Einige durch Zeitumstaende noetig gewordene Bemerkungen ueber Verbesserung des Gesindewesens*. Leipzig, 1845.

‡ Heinrich Bodemer, *Ueber die Zustaende der arbeitenden Klassen*. Grimma, 1845.

§ L.c.

|| Eduard Pelz, *Die Stellung der Arbeiter bei der Landwirtschaft*. Breslau, 1847.

¶ Quoted in C. Noback, *Die Leinen-Industrie in Deutschland. Untersuchungen ueber ihren Verfall und Beleuchtung der zu ihrer Aufhilfe vorgeschlagenen Mittel*. Hamburg, 1850.

"Conditions among the weavers are somewhat better than those among the spinners, but among the weavers also one can see one family after the other go down in poverty." And, finally, L. Buhl reports a meeting preparatory to the formation of a Society for the Welfare of the Working Classes in Berlin at which a Herr Constant read a list of the various trades and occupations, giving the wages. Buhl comments on this list: "The figures of wages were obviously much exaggerated, and yet they showed to a large extent such a low rate that in many cases it obviously did not reach the minimum of existence."\*

But "living" conditions form really only part of the life of the worker. We cannot adequately survey his life without also studying his working conditions.

## 5. WORKING CONDITIONS

Working conditions in the beginning of the nineteenth century were probably not harder than in the beginning of the eighteenth century. The working day was about the same. The number of workers suffering from congestion, poor ventilation, and so on, in the factories, was very small. Unemployment was rare. The intensity of work had not increased much.

The only workers who were worse off were those employed under the guild system. They suffered from the general decline of this institution; it became more and more difficult to set up as a master; competition among the masters was increasing, and the newly developing system of manufacture began to have its first effects among the smaller craftsmen.

The emancipation of the peasants and the creation of an agricultural proletariat brought about the first large-scale deterioration of working conditions, as now the older worker was more easily thrown on the scrap-heap. He had lost the scanty economic support which the feudal system had guaranteed him. With the growth of the factory system, after the wars of 1813-1815, the employers resorted in Germany to the same means of exploitation as those used in other early industrial-capitalist countries: the lengthening of the working day, the lowering of real wages, the extensive employment of women and

\* L.c.

children, the neglect of health conditions in the factories (space, air, dust, sanitary facilities, etc.), extortion through the truck system, and so on. We can call this the period of extensive or primitive exploitation, and all that we have observed in Great Britain and the United States\* holds more or less true also for Germany. While because of relatively good material it is possible to deal with the problem of child labour in a special section,† and while it is more satisfactory to handle the data we have on productivity of work and accidents in connection with those available for the period 1850-1870,‡ it is advisable to collate here our information on the length of the working day, the truck system, health conditions, and so on.

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As far as I have been able to ascertain, the working day in Germany was seldom longer than 12 hours in the beginning of the century. It may have been somewhat longer in the summer in the agricultural districts, but then it would be shorter in the winter. Night work was as good as unknown. Sunday work was very rare.

All this soon changed, however. By the twenties factory night work had become not unusual. Sunday work began to be more generally practised, not only in the factories but also by apprentices and journeymen, especially through heavy pressure upon the wages of the latter. The working day was extended to 13 and even 14 hours, and was the same for men and women; and often for children too—though the latter sometimes had longer rest periods than the adults. But these rest periods were often used for lessons. At the end of the period under review, the factory workers' day had lost all limit; and the same held true for workers employed by small craftsmen and for industrial home workers. In the country, the working day of the agricultural worker was limited by the length of daylight only as far as his work in the fields was concerned. Often he spent additional hours with his family working at weaving, woodwork, etc., in his home, in order to supplement his low wages.

\* See this *Short History of Labour Conditions under Industrial Capitalism*, Chapter I in Vol. I and Vol. II.

† See p. 51.

‡ See pp. 82 ff.



We may study two types of material on the working day in the forties: one giving us data on its length, the other giving us the demand of those who wanted an improvement in conditions.

As an example of the first kind, we can quote Ernst Abbe, the son of a spinning master in Eisenach, who says that until the beginning of the fifties his father worked day in and day out, also on Sundays, 14 hours when business was normal, and 16 when it was good. There was no official rest hour and when the son brought the midday meal to the factory, the father ate in all haste "leaning against the machine or sitting on a box. . . . My father was a giant, of inexhaustible strength, but an old man in carriage and looks when 48; his less hardy colleagues were old men when 38."\* While in some factories and trades the working day was shorter, in others it was longer. An 18-hour day is reported by Veritas† and others, while Schneer‡ gives considerably lower figures for Breslau. The 12-hour day—which had been regarded as fairly long in the beginning of the century and which was regarded as below normal in the twenties—had, in the forties, become a radical demand of the reformers. Veritas, for instance, calls for a working day of 12 hours. Klemm§ is midway between the reformers and those who were regarded as wild revolutionaries; he demands the shortening of the working day to 10 or 12 hours. Luechow,|| who actually quotes Engels in his pamphlet, goes so far as to demand a 10-hour day.¶ It should be mentioned here that the employers kept the decline in the length of the working day—which took place later for reasons to be discussed—within "decent bounds"; the general 12-hour day was a product of the "new Reich," and becomes effective only after 1870.

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\* *Sozialpolitische Schriften*. Jena, 1906.

† Vincens Veritas, *Die Wuensche und Forderungen der Arbeiter an ihre Arbeitgeber und an den Staat*. Leipzig, 1848.

‡ *Ueber die Zustaende der arbeitenden Klassen, etc.*

§ H. Klemm, *Spezielle Eroerterungen und Vorschlaege zu einer durchgreifenden Reform des Gewerbewesens und der Arbeiterverhaeltnisse im Allgemeinen*. Leipzig, 1848.

|| J. C. Luechow, *Die Organisation der Arbeit und deren Ausfuehrbarkeit*. Berlin, 1848.

¶ Only during the revolution the demands become more radical; thus, in April, 1848, the printers demanded the 10-hour day, after having asked in March only for a limitation of the working day to 12 or 14 hours.

Together with the lengthening of the working day, unemployment, the insecurity of labour, also developed in the earlier nineteenth century. While more and more labour was being absorbed in periods of increasing business activity, thousands of workers lost their employment as soon as business slackened. No reliable statistics are available to give a general indication of the extent of unemployment. But descriptions of conditions in some places, some generalizations, and certain consequences of unemployment, confirm the general impression that conditions in the industrial districts of Germany, especially in the forties, were not different from those in Britain.\* On the other hand, the fact that the number of free workers was smaller and the industrialization process less advanced in Germany, make it probable that the number of unemployed in relation to the total population was smaller in Germany than in Britain. Nevertheless, there was a percentage of unemployment of over 70 in Pforzheim (Baden) during the crisis of 1847†; in Bavaria, a third or even half of the population in a number of cities had to be relieved by the local government in 1843 and 1846–1847‡; as did every fourth citizen of Cologne in 1847.§ There was also the virtual suspension of child labour protection in Prussia|| in 1847, for fear that the employers would otherwise dismiss all children and thus add to the general misery of the working classes.

Unemployment was especially high during the hungry forties, and many a worker hoped to find a way out of his misery through emigration. The number of emigrants from Germany was very small during the twenties, probably less than 5,000 annually. It began to increase during the thirties, but up to 1843 was probably only slightly more than 20,000 annually.¶ In the following years

\* For Britain see this *Short History of Labour Conditions*, Vol. I, p. 41.

† Cf. *Hochwichtiges der Gegenwart in 7 Bildern*, etc. ‡ See J. M. Maier, l.c.

§ W. U. Stehling, *Gedanken ueber die Ursachen des wachsenden Pauperismus, seine Heilung und ueber zeitgemaeesse Staatsverfassungen*. 3. Aufl. Duesseldorf, 1848.

|| In an official report by the county authorities of Merseburg to the Prussian government we read on the control of child labour, that it had to be handled "very cautiously" in order not to cause the employers to dismiss all juvenile workers. (Quoted by G. K. Anton, l.c.)

¶ Though this figure is relatively small it was sufficient to cause occasionally a discussion of the problem of emigration. See, for instance, Carl Gottfried Schatter, *Ueber das Verhalten des christlichen Lehramtes der Auswanderungslust in dieser unserer Zeit gegenueber*. Neustadt a. d. Orla, 1834.

it rose rapidly and passed the 100,000 mark in 1846 and 1847; and during the following three years, when conditions improved slightly, it remained above 80,000 annually.\* While in previous decades the literature on the emigration problem was often directed against it, the forties brought forth a number of pamphlets which regarded emigration as at least a partial alleviation of the terrible plight of the people. Typical of such literature is the title of a pamphlet by Hundeshagen: "German Emigration as a National Affair, Especially the Emigration of the Proletariat."†

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One of the worst forms of exploitation at this period was the truck-system. Through this, the workers were either forced to buy the commodities they needed from the employer at inflated prices, or to accept part of their wages in the form of commodities. The latter method was even more pernicious than the former, for employers forced all kinds of goods, usually second-hand or damaged, upon the workers, which they did not need, and which they were then allowed to sell back to the employer at considerable loss, in order later to buy the necessities of life at inflated prices. The employers often paid off the worker with luxuries, such as lengths of silk, hunting bags, or patent medicines for which the worker had not the slightest use. The worker had to pay inflated prices for these goods, sometimes 100 per cent more than in a shop. Of course, he lost again when selling these things back to the employers, and yet again, of course, when buying the necessities of life.

Sometimes the employers paid off the workers with goods they had produced. In Lennep eight out of fifty clothmakers paid their workers with cloth.‡ Anton gives an interesting table of the amount of wages paid to a number of workers in money and in kind, prepared by the chairman of the factory court (Fabrikgericht) of Solingen, from which I quote the following figures§:

\* See Wilhelm Roscher und Robert Jannasch, *Kolonien, Kolonialpolitik und Auswanderung*. 3. Auflage. Leipzig, 1885.

† Friedrich Hundeshagen, *Die Deutsche Auswanderung als Nationalsache, insbesondere die Auswanderung des Proletariats*. Frankfurt am Main, 1849.

‡ *Handwoerterbuch der Staatswissenschaften*. Jena, 1890, Article on the Truck-System.

§ L.c.

Case	Wage period	Paid in Money		Paid in Kind	
		(Thaler and Silbergroschen)			
1	12/4/1828 to 1/6/1841	228	24	656	22
2	12/8/1830 to 10/2/1840	222	23	173	13
3	13/2/1835 to 1/1/1844	325	—	39	8
4	15/6/1827 to 8/8/1844	280	1	184	17
5	19/8/1830 to 28/7/1844	144	10	90	21

The truck-system was not used on as great a scale for the working class in general as in the above examples; but it was considerable, and raised such indignation that in spite of all counter-pressure the employers had partly to yield. In consequence of the revolution of 1848, the first decree against the truck-system was issued in Prussia in 1849.\* If one realizes that the remainder of the social legislation in Prussia during the period under review deals with child labour only, it may be recognized how the workers detested the truck-system and insisted on its abolition.

\*                    \*                    \*

We have but little material on the health of the worker during this period. While, undoubtedly, low wages and poor housing, feeding and clothing conditions contributed towards the deterioration of the workers' health, the major cause of the poor health of the people is probably the working conditions.

Anton,† for instance, reports that miners are unable to do any work at 45, at latest 50 years of age, because of breast and abdominal troubles or skin diseases. This is of course due to the conditions of their work. Engels, in giving the causes of the increase in the consumption of spirits, mentions: "Work in low rooms in factories where the people absorb more coal smoke and dust than oxygen. . . . The weavers who have looms at home sit at them from morning to night in a crouching position and their spinal marrow is dried by the heat of the stove."‡ Dr. Bluemner, the city poor physician of Breslau, previously quoted,§ says that women often suffered from uterine troubles because they often had to go to work a few days after confinement. And many adult workers, in addition to the consequences of their present

\* Saxony, like Prussia, passed a very incomprehensive anti-truck law in the same year.

† L.c.

‡ *Briefe aus dem Wuppertal*, l.c.

§ P. 43.

working conditions, still suffered from the conditions they had encountered in the factories as children.

In fact, health conditions deteriorated to such a degree that, in spite of low wages, workers were forced to spend an increasing amount of their working time away sick. Humane men began to study palliatives, and many societies were formed to help sick workers, doing some good in the few cases they were able to help, but not affecting the situation as a whole.\*

Summarizing the development of working conditions during the period from 1800 to 1850, we see that they deteriorated considerably and continuously. To the German workers, just as to the British and American workers, the conditions of 1800, which were, of course, anything but satisfactory, must have seemed in 1850 almost a golden age.

## 6. THE CHILD OF THE POOR

The primitive cruelty of the early period of industrial capitalism is perhaps best illustrated by the treatment of children. Whether we study conditions in Great Britain, the United States† or Germany, we find a callous sacrifice of the child in the process of exploitation.

More and cheaper labour was the slogan of this age—regardless of the cost to the labour supply. One may say that this has always been the motto of capitalist employers. But the fact that technical circumstances, the crudity of the machine, which however did dispense with a certain amount of muscle effort, and furthermore the rapidly growing population and industrial reserves, enabled the employers to indulge in this policy to a degree unheard of before and later. For, in the second half of the nineteenth century, it became more difficult to employ such illiterate and technically unskilled labour as that of children. This does not mean that child labour disappeared later, but its worst features were confined, in the more advanced capitalist countries, to only a few branches of national industry, chiefly to home labour. The partial abolition of child labour was the

\* See, for instance, the above-mentioned study by Eduard Liese, or Albert Varrentrapp, *Ueber Kranken-Unterstützungs-Kassen als ein Mittel gegen die Verarmung braver Arbeiter*. Frankfurt am Main, 1848.

† See Chapters I of this *Short History of Labour Conditions*, Vols. I and II.



product of technical development in industry, of the struggle of labour for better conditions and the efforts of bourgeois humanitarians, and finally of the need of the army or navy for better and healthier recruits.

In Germany, because of the backwardness of her industrial development, the restriction of child labour occurred later than in many other countries, while its extent and cruelty were equal to that practised anywhere in the capitalist world.

The few data we have on the extent of child labour are insufficient to give us a general picture; I have summed up what can be said with our present knowledge.\* The age for children beginning work is usually six or higher. But quite a number of cases are recorded of five and even three-year-old children in the factories, and especially in home work. The record of a worker aged two, reported in England at that time,† seems not to have been beaten in Germany. As often as not, the working time for children was the same as for adults. That is, it amounted to rather more than 12 hours in the twenties and increased to 14 and more in the thirties and forties. Official reports to the Prussian government‡ mention an 11-hour night shift for children in a cotton-spinning factory in Duesseldorf in 1821 and a 13-hour shift in the same factory in 1823. After having finished their 11-hour night shift the children were sent by the employer (who was praised for this as one of the most progressive men of his trade and country) to a school attached to the factory where they were taught for two more hours. The following are figures officially given for the length of the working day for children and juveniles in the middle of the twenties, for a number of counties :§

Iserlohn ..	usually 14 hours	Breslau ..	10 to 14 hours
Dortmund ..	10 to 15 hours	Frankfurt a.O. ..	7 to 16 hours
Hagen ..	10 to 12 hours	Liegnitz ..	15 hours
Bochum ..	up to 14½ hours	Erfurt ..	10 to 14 hours
Duesseldorf ..	6 to 13 hours	Merseburg ..	6 to 12 hours
Aachen ..	8 to 12 hours	Magdeburg ..	9 to 14 hours
Koblenz ..	11 to 14 hours	Potsdam ..	13 to 14 hours
Eslohe ..	11 to 13 hours	Berlin ..	7 to 12 hours
Koeln ..	11½ to 14 hours	Siegen   ..	8 to 12 hours
Trier ..	8 to 14 hours		

\* See pp. 26 f.

† Cf. Friedrich Engels, *The Condition of the Working Class in England in 1844*, Chapter VII.

‡ Quoted by Anton, l.c.

§ Quoted by Anton, l.c.

|| Also in mines and foundries!

The working day was usually shorter during the winter than during the summer. Night work was not unusual.

The standard of living of these children was extremely poor. Because their way to work was often long the parents tried to put them up in lodgings with workers living nearer to the factory. Their food is officially described in the case of the county of Iserlohn\* as consisting chiefly of potatoes, salt and water, or potatoes baked in beet-oil and some chicory-broth.

Such conditions began to attract the attention of humane people and the number of voices raised against them grew rapidly. Finally, a general joined them. Lieutenant-General Horn complained that the industrial areas did not supply their quota of recruits and mentioned night work for children as a cause. Even the king then felt that something ought to be done, and he was roused to publish an order, dated May 12, 1828, in which he expressed his disapproval of night work for children.

But this did not seriously disturb the employers of child labour and conditions not only continued as before but deteriorated further. Child labour was on the increase and the extent of child exploitation grew. Finally, by an order of the cabinet, dated April 6, 1839, the first labour protection measure was introduced in Germany.† Children could henceforth be regularly employed in factories and mines only after having reached the ripe age of nine; night work and work on Sundays and Holidays was forbidden. Up to the age of 16, they were not allowed to work more than 10 hours. But the local police was empowered to permit the lengthening of the working day by one hour for periods not exceeding four weeks.

The chief effect of this law was that from now on reports became extremely unreliable and the bourgeois apologists of the capitalist régime were thus able to use official evidence to show a rapid improvement of conditions. Actually, conditions were considerably worse during the forties than during the thirties or twenties. Ernst Fabri‡ describes the factory children as follows: "These poor creatures are rarely able to enjoy good health when they grow up; their bodies cannot fully develop as they suffer from lack of fresh air and free movement and were exposed the

\* Anton, l.c.

† Bavaria and Baden followed Prussia in 1840.

‡ L.c.

major part of the day to the damp, hot and dusty air of the factory; and early disability soon leads such people to poverty."

The education of children was definitely worse in 1850 than in 1820, and there was little enough in the earlier years. True, Hoffmann\* finds that at the end of the thirties about 80 per cent of the children of Prussia visited the schools on the census day; he also finds that in the Western factory districts (Duesseldorf, Koeln, Aachen) somewhat less than this percentage go to school and he is courageous enough to write that "only the misuse which the factory system makes of the cheap labour of the children"† explains this state of affairs. He even says that in some counties the percentage of school attendance is very much lower—in Bromberg, for instance, only 54 per cent. But all these figures are, in the first place, wrong, and, in the second place, do not indicate what they seem to. It is obvious that on the census day more children attended school than otherwise. Actually, much less than 50 per cent of the children in Prussia, and Germany as a whole, attended school regularly throughout the year. Furthermore, they were usually not able to learn anything. This was due partly to the condition of the school rooms and the quality of the teachers. Schnell‡ writes: "But if one wants to convince oneself fully of the much praised progress of the German elementary school, one has only to look around the usually dirty school rooms, and to observe the unbalanced physical and mental state of many teachers in town and country, who live in the most bitter need and penury." Partly it was due to the fact that children attended school badly nourished and poorly clothed, and often completely tired out from home or factory work, and therefore unable to follow the lessons.

Such were conditions affecting the children of workers, or peasants, or the lower middle classes in Germany around the middle of the nineteenth century.

\* J. G. Hoffmann, *Die Bevoelkerung des Preussischen Staats nach dem Ergebnisse der zu Ende des Jahres 1837 amtlich aufgenommenen Nachrichten in staatswirtschaftlicher, gewerblicher und sittlicher Beziehung*. Berlin, 1839.

† It is not surprising that he hurriedly adds to this critical remark—obviously unseemly for an official Prussian statistician—"this misuse has, however, become a necessity, in order to be able to stand the competition from countries which already do such things longer and perhaps also more intensively." But then he thinks perhaps of the poor children, and mentions some parliamentary attempts at curbing child labour in England.

‡ L.C.

## 7. CONCLUSION

It is perhaps appropriate to conclude this survey of labour conditions in Germany during the period of early industrial capitalism with a quotation from a study by A. Bernhardi,\* which again reminds us of the natural identification of suffering with the proletariat:

"For the proletariat consists of those who with full labour power and capacity to work, with the best will to work, either do not find sufficient work or do not get a wage for their work sufficient even to procure the things most necessary for life."

## APPENDIX TO CHAPTER I

I have prepared myself for writing this chapter by reading such well-known standard works as G. F. Knapp, *Die Bauernbefreiung und der Ursprung der Landarbeiter in den aelteren Teilen Preussens*, W. Sombart, *Deutsche Volkswirtschaft im 19. Jahrhundert und im Anfang des 20. Jahrhunderts*, and others, some of whom are mentioned in the text. In addition, I have gone through a considerable number of contemporary pamphlets, many of them being mentioned in the text. Since these are not at all well known, I add to those quoted in Chapter I a list of others which I found useful:

ANONYMOUS: *Das Eigentum ist unverletzlich*. Oldenburg, 1850.

*Der Notstand der unteren Volksklassen mit seinen augenfaelligen, nahen und entfernten Ursachen und den ausfuehrbaren sichern Mitteln zu seiner radikalen Bekaempfung. Von einem Ostpreussen*. Koenigsberg, 1848.

*Die Emanzipation der Tagelohner*. Guestrow, 1849.

*Die Selbsthilfe der arbeitenden Klassen durch Wirtschaftsvereine und innere Ansiedlung*. Berlin, 1848.

*Keine Hungersnot mehr! oder: das einzige wahre Mittel wie jeder Teuerung in der Folge vorzubeugen ist*. Sonneberg, 1847.

*Offener Brief an alle Innungsgeossen Deutschlands sowie zugleich an alle Buerger und Hausvaeter. Von zweiundzwanzig Innungen zu Leipzig*. Leipzig, 1848.

\* A. Bernhardi, *Ueber die sozialen Nachteile des gewerblichen Maschinenwesens*. Eilenburg, 1848.

- Offenes Sendschreiben an den Zentral-Verein und saemtliche Lokalvereine fuer das Wohl der arbeitenden Klassen.* Berlin, 1845.
- Ueber den Schlesischen Leinwandhandel und die gegenwaertige Not der Weber. Eine wahrhafte Darstellung, veranlasst durch die darueber erschienenen Berichte in den Breslauer und Berliner Zeitungen, von dem Magistrate und der Kaufmanns-Sozietat in Landeshut.* Breslau, 1827.
- Verhandlungen der 1. Abgeordneten-Versammlung des norddeutschen Handwerker- und Gewerbestandes zu Hamburg, 2.-6. Juni, 1848.* Hamburg, 1848.
- Vorschlaege zur Abhilfe des Notstandes der Arbeiterklasse.* Bockenheim, 1848.
- BASZYNSKI, J., *Radikale Loesung der sozialen Frage fuer ganz Deutschland.* Berlin, 1848.
- BERENDS, JULIUS, *Wie ist der Not der arbeitenden Klassen abzuhelpfen?* Leipzig, 1847.
- BENSEN, H. W., *Die Proletarier.* Stuttgart, 1847.
- CANSTATT, C., *Die Organisation der Arbeit und des Armenwesens.* Erlangen, 1848.
- CELLARIUS, MAX JOS., *Ueber die Not der kleinen Gewerbe und die Mittel zu gruendlicher Abhilfe.* Ulm, 1845.
- CIESZKOWSKI, AUGUST GRAF VON, *Zur Verbesserung der Lage der Arbeiter auf dem Lande.* Berlin, 1846.
- ESCHERISCH, DR., *Aerztliche Vorschlaege zur Milderung der gegenwaertigen Not durch den Mangel und die Teuerung der Nahrungsmittel.* Erlangen, 1846.
- FUNCK, FRIEDRICH, *Wie ist der Teuerung abzuhelpfen?* Frankfurt a.M., 1846.
- GEISSLER, W. A., *Dem ausgedienten Staatsdiener gebuehrt keine Pension.* Magdeburg, 1848.
- HAHN, CHR. U., *Die Bezirkswohltaetigkeitsvereine, ihre Gegenwart und Zukunft. Ein Beitrag zur Loesung der Armenfrage.* Stuttgart, 1848.
- HANSEN, GEORG, *Ueber oeffentliche Arbeitsnachweisungs-Anstalten.* Heidelberg, 1846.
- HESS, MOSES, *Herausgeber, Die Gesellschaftlichen Zustaende der zivilisierten Welt.* 2 Vol. Elberfeld, 1846 and 1847.
- HEYM, ROBERT, *Maschinen oder Handarbeit? Ein Wort an die deutschen Handarbeiter.* Chemnitz, 1848.
- HOLZSCHUHER, AUGUST FREIHERR VON, *Die materielle Not der unteren Volksklassen und ihre Ursachen.* 2. Aufl. Augsburg, 1850.
- INNUNGEN, zweiundzwanzig—see ANONYMOUS, *Offener Brief.*
- IRENAEUS, *Ueber Pauperismus und Schwanenorden.* Leipzig, 1845.
- JACOBI, LUDWIG, *Ueber Verarmung und Entsittlichung der arbeitenden Klassen.* Leipzig, 1845.
- KOCH, FRANZ VON, *Die Armen- und Arbeiterfrage unserer Zeit mit besonderer Bezugnahme auf Bayern.* Regensburg, 1848.



- KROMM, HERMANN, *Was wollen und koennen wir fuer das Wohl des Volkes tun?* Darmstadt, 1846.
- KRUSE, C. A. W., *Zur Abhilfe des Proletariats. Ein altes Mittel gegen ein neues Uebel.* Elberfeld, 1848.
- MAGISTRAT—see ANONYMOUS, *Ueber den schlesischen Leinwandhandel.*
- MAHR, *Ueber die gewerblichen Verhaeltnisse unserer Zeit, den beklagenswerten Zustand der besitzlosen Volksklassen und die Mittel zur Abhilfe des Uebels.* Darmstadt, 1845.
- PAESCHL, JOSEPH, *Gedanken und Vorschlaege zur Verhinderung jeder kuenftigen Getreideteuerung zur Hebung und Verbesserung der Zustaende des Proletariats, der verwahrlosten Leinenindustrie, des Verkehrs und Handels ueberhaupt. Nebst einem hoechst freisinnigen Mittel, die Juden ohne Beeintraechtigung der Christen zu emanzipieren, deren Reichtuemer dem Wucher zu entziehen, und fuer das Gemeinbeste produktiv zu machen.* Linz, 1848.
- PFEIL, L. GRAF, *Arbeiter! Man betruengt Euch!* Berlin, 1848.
- POHLE, C. L. F., *Die Not des Mecklenburgischen Handwerkerstandes.* Schwerin, 1848.
- RAUMER, FRIEDRICH VON, *Briefe ueber gesellschaftliche Fragen der Gegenwart.* Leipzig, 1850.
- SCHMIDT, FRIEDRICH, *Untersuchungen ueber Bevoelkerung, Arbeitslohn, und Pauperismus in ihrem gegenseitigen Zusammenhange.* Leipzig, 1836.
- SCHNEER, ALEXANDER, *Was verlangt der deutsche Landmann im gegenwaertigen Zeitpunkt?* Breslau, 1848.
- SELMER, *Wie ist den Arbeitsleuten auf dem Lande zu helfen?* Neubrandenburg, 1848.
- SPREWITZ, ADOLPH VON, *Beleuchtung der Verordnung vom 15. Mai 1848 wegen Einsetzung von Schiedskommissionen zur Feststellung streitiger Verhaeltnisse der Hoftageloeohner, insbesondere der aufgeworfenen Frage: Ist jetzt eine Aufhebung dieser Verordnung an der Zeit?* Guestrow, 1849.
- STILCH, F. A., *Die schlechte Zeit oder Geld, Spekulation und Arbeit.* Breslau, 1844.
- VAHLKAMPF, A., *Ueber Heimatgesetze.* Frankfurt am Main, 1848.
- VOELTER, LUDWIG, *Geschichte und Statistik der Rettungs-Anstalten fuer arme verwahrloste Kinder in Wuerttemberg. Mit Eroerterungen und Vorschlaegen. Ein Beitrag zur Loesung der Frage des Pauperismus.* Stuttgart, 1845.
- WELSCH, J. B., *Gutachten ueber den Vollzug des Gesetzes die Abloesung der baeuerlichen Grundlasten betreffend.* Muenchen, 1848.
- WENCKSTERN, OTTO VON, *Die deutsche Industrie und der Verein zur Abhilfe des Notstandes der deutschen Fabrikarbeiter.* Bonn, 1844.

Though the British Museum, for a non-German library, is a treasury of German pamphlets, I am sure that, if I had been able to write this study in Germany, or if I had been able to use the Marx-Engels-Lenin Institute's magnificent collection of

pamphlets on this subject, in Moscow, I would have found considerably more material.

\* \* \*

The index of industrial production is based on the following data. Firstly, I constructed a tolerably reliable index of production in heavy industry, composed of the following series: hard-coal and lignite production in Prussia for the years 1800 to 1837 (hard-coal 1800 to 1837,\* lignite 1822 to 1837†) and for the Zollverein territory for the years 1837 to 1850; iron ore production in the Bonn district, 1822 to 1837, and for the Zollverein territory for the years 1837 to 1850; copper ore production in the Halle-Saale district, 1800 to 1837; pig iron production for Prussia for the years 1821 and 1823 to 1834, and for the Zollverein territory for the years 1834 to 1850. The resulting indices for 1800 to 1850 are:

#### PRODUCTION IN MINING AND IRON MANUFACTURE,

1800 TO 1850

(1860 = 100)

Year	Mining	Year	Mining	Year	Mining	Year	Mining
1800	10	1805	9	1810	10	1815	9
1801	9	1806	8	1811	8	1816	10
1802	9	1807	8	1812	8	1817	10
1803	9	1808	8	1813	8	1818	11
1804	9	1809	8	1814	8	1819	9

Year	Mining	Iron	Year	Mining	Iron	Year	Mining	Iron
1820	10	—	1831	15	18	1842	31	30
1821	12	13	1832	15	21	1843	29	32
1822	12	(13)	1833	15	21	1844	30	32
1823	12	14	1834	16	21	1845	35	38
1824	12	13	1835	17	23	1846	41	42
1825	13	14	1836	17	25	1847	42	50
1826	13	15	1837	20	26	1848	39	40
1827	13	16	1838	23	26	1849	40	37
1828	14	15	1839	24	29			
1829	13	17				1850	46	41
			1840	26	31			
1830	14	16	1841	26	31			

The sources for the construction of these indices are: *Archiv fuer Bergbau und Huettenwesen*, 1818–1831; *Archiv fuer Mineralogie*,

\* 1800 to 1816 Dortmund region only.

† 1822 to 1837 Bonn district, 1825 to 1837 Halle-Saale district, 1825, 1828, 1831, 1834, 1837 Prussia as a whole.

*Geognosie, Bergbau und Huettenkunde*, 1829-1855, *Berg- und Huettenmaennische Zeitung*, 1824-1861; *Zeitschrift fuer das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, 1854-1861, generally, and M. Reuss, *Mitteilungen aus der Geschichte des Koeniglichen Oberbergamtes zu Dortmund und des Niederrheinisch-Westfaelischen Bergbaus*, Vol. 40; 150 *Jahre Preussischer Bergverwaltung im Mitteldeutschen Bergbau*, Vol. 73; and Arlt, *Ein Jahrhundert Preussischer Bergverwaltung in den Rheinlanden*, Vol. 69; Viehban, G. W. von, *Statistik des Zollvereinten und noerdlichen Deutschland*, Berlin, 1858-1868; Neumann, Heinrich, Bernhard, *Die Metalle, Geschichte, Vorkommen und Gewinnung, nebst ausfuehrlicher Produktions- und Preisstatistik*, Halle, 1904.

For my rough guesses at the development of industrial production in consumption goods industries, I used the following series and sources of consecutive figures (and numerous other sources for figures for individual years): cotton consumption in the Zollverein territory, 1834 to 1850; beer production and production of spirits in Prussia and Saxony, 1836 to 1850; sugar production in Zollverein territory, 1837 to 1850; the sources are: Viehbahn, G. W. von, l.c.; Dieterici, C. F. W., *Statistische Uebersicht der wichtigsten Gegenstaende des Verkehrs und Verbrauches im Preussischen Staate und im deutschen Zollverbande*, 6 Vol., Berlin, 1838-1857; Dieterici, C. F. W., *Die statistischen Tabellen des Preussischen Staats nach der amtlichen Aufnahme des Jahres 1843*, Berlin, 1845; Ferber, C. W., l.c.; *Statistische Uebersichten ueber Warenverkehr und Zollertrag im Zollvereine*, 1842 to 1861; *Statistisches Jahrbuch fuer Sachsen*, 1885; *Jahrbuch fuer die Amtliche Statistik des Preussischen Staats*, IV. Jahrgang.

\* \* \*

The wage indices are based on the following statistics, giving wages in marks and pfennigs:

#### I. WAGES OF BUILDING TRADE WORKERS

Years	Masons				Carpenters		
	Wuerttemberg*	Esslingen*	Leipzig†	Rostock†	Wuerttemberg*	Ham-burg*	Rostock†
1820-21	—	1.08	—	—	—	—	—
1830-31	—	1.02	—	—	—	—	—
1830-39	1.17	—	—	—	1.14	—	—
1840-41	—	1.18	—	—	—	—	—

\* Daily wages.

† Weekly wages.

I. WAGES OF BUILDING TRADE WORKERS—*continued*

Years	Masons				Carpenters		
	Wuerttemberg*	Esslingen*	Leipzig†	Rostock†	Wuerttemberg*	Ham-burg*	Rostock†
1840-49	1·31	—	—	—	1·29	—	—
1840	—	—	—	10·50	—	2·40	10·50
1841	—	—	8·28	10·50	—	2·40	10·50
1842	—	—	8·28	10·50	—	2·40	10·50
1843	—	—	8·28	10·50	—	2·25	10·50
1844	—	—	8·28	10·50	—	2·25	10·50
1845	—	—	8·28	10·50	—	2·25	10·50
1846	—	—	8·28	10·50	—	2·25	10·50
1847	—	—	8·88	10·50	—	2·25	10·50
1848	—	—	8·88	12·00	—	2·25	12·00
1849	—	—	8·88	—	—	2·25	—
1850	—	—	8·88	12·38	—	—	12·38

## II. WAGES OF METAL WORKERS

Wuerttemberg*					Krupp Workers in Essen*			
Years	Smiths	Lock-smiths	Copper-smiths	Cutlers	Year	Wage	Year	Wage
1830-39	1·00	1·11	1·09	1·11	1825	0·88	1847	1·36
1840-49	1·14	1·20	1·23	1·23	1833	0·91	1848	1·48
1850-59	1·34	1·40	1·43	1·43	1844	1·36	1849	1·34
					1845	1·32	1850	1·25
					1846	1·37		

## III. WAGES OF TEXTILE WORKERS

Years	Wuerttemberg*				Meerane†	Augsburg‡
	Cotton Spinning	Wool Spinning	Cotton Weaving	Cloth Manufacture	Weavers	Spinning and Weaving
1820-30	—	—	—	—	10·50	—
1833	—	—	—	—	7·50	—
1838	—	—	—	—	13·50	—
1830-39	1·13	1·20	1·09	1·13	—	—
1841	—	—	—	—	—	384
1845	—	—	—	—	—	278
1840-45	—	—	—	—	9·00	—
1840-49	1·29	1·23	1·13	1·20	—	—
1845-50	—	—	—	—	12·00	—
1850	—	—	—	—	—	372

## IV. WAGES OF WOOD WORKERS

Years	Joiners*	Piano Factories* in Wuerttemberg
1830-1839	1·06	1·54
1840-1849	1·20	1·77

\* Daily wages.

† Weekly wages.

‡ Yearly wages.

## V. WAGES OF PRINTING TRADE WORKERS

<i>Years</i>	<i>Wuerttemberg*</i>	<i>Halle†</i>
1820-1829	1·89	8·83
1830-1839	2·14	8·17

<i>Year</i>	<i>Berlin‡</i>	<i>Halle‡</i>	<i>Kassel‡</i>	<i>Leipzig‡</i>	<i>Munich‡</i>	<i>Stuttgart‡</i>	<i>Wuerzburg‡</i>
1830	0·20	0·18	—	0·17	—	0·20	—
1831	0·20	0·18	—	0·17	—	0·20	—
1832	0·20	0·18	—	0·17	—	0·20	—
1833	0·20	0·18	—	0·17	—	0·20	—
1834	0·20	0·18	—	0·17	—	0·20	—
1835	0·20	0·18	—	0·17	—	0·20	—
1836	0·20	0·18	—	0·17	—	0·20	—
1837	0·20	0·18	—	0·17	—	0·20	—
1838	0·20	0·18	—	0·17	—	0·20	—
1839	0·20	0·18	—	0·17	—	0·20	—
1840	0·20	0·18	—	0·18	—	0·20	—
1841	0·20	0·18	—	0·19	—	0·20	—
1842	0·20	0·18	—	0·19	—	0·20	—
1843	0·20	0·18	—	0·19	—	0·20	0·20
1844	0·20	0·18	—	0·19	—	0·20	0·20
1845	0·20	0·18	—	0·19	—	0·20	0·20
1846	0·20	0·18	—	0·19	—	0·20	0·20
1847	0·20	0·18	—	0·19	—	0·20	0·20
1848	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1849	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1850	0·25	0·21	0·23	0·22	0·25	0·20	0·20

## VI. WAGES OF MINERS§

## 1. 1800 TO 1825

<i>Year</i>	<i>Hard Coal Mining</i>		<i>Iron Ore Mining</i>	
	<i>Aachen District</i>	<i>Saar District</i>	<i>Right Bank of the Rhine</i>	<i>Left Bank</i>
1800	—	—	(1·23)	(1·16)
1801	—	—	(1·23)	(1·16)
1802	0·91	—	1·23	1·16
1803	0·99	—	1·23	1·16
1804	0·99	—	1·23	1·16
1805	1·25	—	1·23	1·16
1806	1·26	—	1·23	1·16
1807	1·14	—	1·23	1·16
1808	1·14	—	1·23	1·16
1809	1·14	—	1·23	1·10
1810	1·17	—	1·23	1·10
1811	1·17	—	1·26	1·10
1812	1·17	—	1·26	1·10

\* Daily wages. † Weekly wages. ‡ Per 1,000n. § Wages per shift.



## VI. WAGES OF MINERS\*—continued

I. 1800 TO 1825

Year	Hard Coal Mining		Iron Ore Mining	
	Aachen District	Saar District	Right bank of the Rhine	Left bank
1813	1·33	—	1·26	1·22
1814	1·33	—	1·26	1·22
1815	1·50	—	1·26	1·22
1816	1·50	—	1·20	1·22
1817	1·50	—	1·20	1·22
1818	1·34	1·20	1·20	1·22
1819	1·34	1·26	1·23	1·22
1820	1·34	1·23	1·23	1·20
1821	1·34	1·47	1·23	1·20
1822	1·34	1·47	1·23	1·20
1823	1·34	1·53	1·23	1·20
1824	1·34	1·51	1·23	1·42
1825	1·34	1·56	1·23	1·42

2. 1826 TO 1850

Year	Saar	Coal		Saar	Iron Left bank of Rhine
		Year	Aachen		
1826	1·50	1839	1·63	1·77	1·06
1827	1·51				
1828	1·56	1840	1·60	1·75	1·20
1829	1·56	1841	1·54	1·77	1·18
		1842	1·61	1·81	1·27
1830	1·57	1843	1·49	1·81	1·35
1831	1·59	1844	1·46	1·80	1·46
1832	1·56	1845	1·46	1·81	1·46
1833	1·65	1846	1·60	1·84	1·40
1834	1·60	1847	1·63	1·95	1·58
1835	1·60	1848	1·46	1·95	1·29
1836	1·62	1849	1·37	1·98	1·45
1837	1·65				
1838	1·71	1850	1·54	2·00	1·48

## VII. WAGES OF DAY LABOURERS†

Year	Working in the Country	Working in Cities and Living in Country		Living in Cities	
		Navvies	Building Trade	Factory	
1836	0·69	1·15	1·03	1·15 to 1·26	
1837	0·69	1·15	1·03	1·15 to 1·26	
1838	0·69	1·15	1·03	1·15 to 1·26	
1839	0·69	1·15	1·03	1·15 to 1·26	
1840	0·69	1·15	1·03	1·15 to 1·26	
1841	0·69	1·15	1·03	1·15 to 1·26	
1842	0·69	1·15	1·03	1·15 to 1·26	
1843	0·69	1·15	1·03	1·15 to 1·26	
1844	0·69	1·15	1·03	1·15 to 1·26	
1845	0·69	1·15	1·03	1·15 to 1·26	
1846	0·69	0·92	1·03	1·15 to 1·26	

\* Wages per shift.

† Daily wages.

For sources for Tables I to VI see the sources given after the tables of wages in Appendix to Chapter III. Wages in Table VII are taken from Fr. Dael, *Ueber die Arbeitsloehne der handarbeitenden Volksklassen in Rheinhausen*, l.c.

\* \* \*

The cost of living index for food alone developed during the period under review as follows (1900 equals 100):

Year	Index	Year	Index	Year	Index	Year	Index	Year	Index
1820	58	1827	51	1833	58	1840	59	1847	93
1821	50	1828	53	1834	48	1841	56	1848	62
1822	50	1829	53	1835	50	1842	61	1849	54
1823	52			1836	48	1843	64		
1824	39	1830	56	1837	50	1844	57	1850	53
1825	38	1831	65	1838	57	1845	63		
1826	43	1832	61	1839	60	1846	78		

A very rough index of the cost of living for the years 1800 to 1820 (1820 equals 100) runs as follows:

Year	Index	Year	Index	Year	Index	Year	Index
1800	130	1805	158	1810	111	1815	120
1801	135	1806	164	1811	101	1816	134
1802	133	1807	149	1812	124	1817	172
1803	138	1808	151	1813	115	1818	144
1804	131	1809	131	1814	116	1819	119

For sources see Appendix to Chapter III.

For further sources for studies of a budget of living expenses for individual years, aside from those given in the text (pp. 40f.), see the above quoted article by Dael; K. H. Rau, *Grundsätze der Volkswirtschaftslehre*, 3. Aufl., Heidelberg, 1837, paragraphs 190 and 192; and *Mitteilungen des Statistischen Bureaus in Berlin*, 5. Jahrgang, Berlin, 1852; much data are given also in Parliamentary Papers, Reports of Commissioners, Poor Laws, Appendix F, Part II, Session 4 February to 15 August, 1834.

## CHAPTER II

### A PERIOD OF TRANSITION, 1850 TO 1870

#### I. THE ECONOMIC BACKGROUND

"THE 'powers that were' before the hurricane of 1848 are again the 'powers that be'"—and "every political defeat of the middle class drew after it a victory on the field of commercial legislation": these two characterizations of conditions in Prussia and Germany by Engels\* also explain the development of economic conditions in Germany during the period under review. Add to this the fact that industrial development had suffered, during the last three years of the forties, from a severe economic crisis and "revolutionary disorders," and the ensuing rapid upsurge of business becomes easily understandable.

The middle classes had been defeated in 1848, but semi-feudalism had realized that it had become dependent upon the goodwill of the bourgeoisie. If the middle classes had joined hands with the workers, the peasants and the petty bourgeoisie in 1848, the position of the Junkers would have been lost. Consequently, though not relinquishing their hold upon the political direction of affairs, they were ready to make economic concessions to the capitalist bourgeoisie (not the least important were those in financial and commercial law), and this in turn gave the bourgeoisie a stronger position in the state.† Although it is possible to keep the direction of political affairs for quite some time in semi-feudal hands while an economically powerful bourgeoisie is growing up, it is not possible to do so without the risk of a bourgeois revolution, without letting the bourgeoisie also have some say in matters of politics.

\* *Germany: Revolution and Counter-Revolution.*

† But the position of the bourgeoisie in "good" society, especially in Prussia, was still a very inferior one. Even if some writers (among them also Gutzkow in his later years) tried to spread illusions, the majority of bourgeois writers, and especially the most popular, vented their outraged feelings in novels directed against the nobility—though following an unhappy German tradition they stopped there. See, for instance, the novels of Spielhagen, and also Marlitt (*Goldelse, etc.*) who has been wrongly neglected by highbrows.

Though defeated the German bourgeoisie thus entered the two decades from 1850 to 1870 politically somewhat strengthened and ready for a rapid economic growth. Just as the rapid growth of capitalist economy in the forties accelerated the clash of forces, the development of the fifties shows how the bourgeoisie succeeded in snatching economic victory out of the jaws of political defeat—a feat impossible for the working class which has to win political power before it can gain such economic victory that it can introduce a new mode of production.

A few figures will indicate the general economic development. The population continued to grow rapidly and thus provided a basis for a steadily increasing labour supply:

POPULATION OF GERMANY, 1850 TO 1870

(In millions, on 1871 Reich territory)

1850	35·4
1860	37·7
1870	40·8

Industrial production rose at an unprecedented rate. Although it was higher in the forties than in any of the preceding decades, the production of consumption goods as well as of production goods (heavy industrial products) rose from the forties to the fifties by over 100 per cent, more than during any decade of the nineteenth century before and after 1850-1860, also more, of course, than in the twentieth century. In fact the development of capitalist industry during the ten years following the revolution of 1848 is unique in German history.

It is during the fifties that the primary foundations of Germany as a first-rate industrial power were laid. It was upon the development of the fifties that the German labour movement of the sixties and the following decades was materially based; during the fifties, a numerically and relatively large working class was created. It was the development of the fifties that provided the material basis for the bourgeois demand for a unification of Germany. During the fifties an economic development took place which also urgently demanded the process of national unification which took place in the sixties and in 1870-1871. Friedrich Engels points this out when he says\* that “the demand for a united ‘fatherland’ had a very materialistic back-

\* *Gewalt und Oekonomie bei der Herstellung des Neuen Deutschen Reiches.*

ground," that it was no longer "the nebulous urge of romantic students"\* or "the already considerably more realistic call for unity of the lawyers and other bourgeois ideologists . . . who believed to love freedom and unity abstractly."†

# INDUSTRIAL PRODUCTION, 1840 TO 1870‡

Years	Total	(1860 = 100) Consumption	Production	Totals§
		Goods	Goods	1913
1841-1850	(36)	(35)	37	(5)
1851-1860	(78)	(75)	81	(11)
1861-1870	116	109	123	16

The rise during the fifties is phenomenal; during the sixties production developed at a rate not very different from the forties. But during the fifties we find a second important development apart from the rapid quickening of the rate of growth: while during the first four decades of the century capitalist industrial production of consumption goods grew more rapidly than production in the heavy industrial sector, during the forties we find, for the first time, a slightly greater rate of growth in the latter. This change in emphasis in the development of industrial production is even more pronounced in the fifties, when this tendency had come to stay until the present day—a development not different from other countries where also the growth of capitalist industry was first chiefly concentrated upon consumption goods industries, and only later upon heavy industry.||

\*                      \*                      \*

This rapid growth of industrial production must be observed from various angles in order to understand fully all its important implications. The following table shows some aspects of the financial basis and the consequences of this rapid development; it deals with the formation of joint-stock companies in mining and foundries:¶

\* "Wartburgfestlicher Burschenschaftler."

† "um ihrer selbst willen."

‡ 1913 equals 100.

§ Figures in brackets rough estimates.

|| For reasons given in Chapter I, this change in emphasis has never been realized by bourgeois economists, if they have given any attention at all to this problem.

¶ *Jahrbuch für die Amtliche Statistik des Preussischen Staats*, I. Jahrgang.



## FORMATION OF JOINT-STOCK COMPANIES IN MINING AND FOUNDRIES, 1834 TO 1861

Year	Number of Companies formed	Share Capital of Companies (In marks)	Year	Number of Companies formed	Share Capital of Companies (In marks)
1834	1	9,600,000	1852	6	26,315,200
1836	1	8,100,000	1853	8	47,535,000
1838	1	3,600,000	1854	3	5,700,000
1840	1	1,920,000	1855	3	21,360,000
1842	1	3,600,000	1856	22	72,015,000
1844	1	1,050,000	1857	17	39,180,000
1845	1	24,000,000	1858	9	15,315,000
1848	2	6,500,000	1859	3	5,400,000
1849	1	6,000,000	1860	2	1,500,000
1850	1	3,300,000	1861	2	4,425,000
1851	3	8,240,000			
			Total	89	314,655,200

During the 18 years from 1834 to 1851, 14 joint-stock companies with a capital of slightly more than 75 million marks, an average of roughly  $5\frac{1}{2}$  million marks per company, were formed. During the following 10 years the number of new companies formed was 75, more than five times as many as during the preceding 18 years; their total capital amounted to almost 240 million marks, more than three times as much as during the preceding longer period; and the capital invested per company was roughly 3 million marks, which shows that this new method of financing industry was also spreading to somewhat smaller companies.

Of course, mining and foundries were by no means the only or even the most important branches of national industry into which capital came in large amounts through the formation of joint-stock companies. The following tables survey in general the formation of joint-stock companies in Prussia and Bavaria, up to 1870:\*

JOINT-STOCK COMPANIES IN PRUSSIA, 1801 TO 1870  
(Capital in millions of marks)

Years	Mining and Foundries		Banks		Insurance		Railways		All Industry	
	No.	Capital	No.	Capital	No.	Capital	No.	Capital	No.	Capital
1801-25	2	1.5	1	6.0	5	23.9	—	—	16	34.4
1826-50	18	82.8	3	18.6	18	76.9	27	427.9	102	638.0
1851-70	79	275.4	20	94.7	37	158.5	20	1,722.4	295	2,404.8

\* See *Handwörterbuch der Staatswissenschaften*, Jena, 1890, article on "Aktien-gesellschaften."

## JOINT-STOCK COMPANIES IN BAVARIA, 1834 TO 1870

(Capital in millions of marks)

Years	Banks		Textiles		Transport		All Industry	
	No.	Capital	No.	Capital	No.	Capital	No.	Capital
1834-48	1	17.1	3	3.7	6	16.8	16	42.3
1849-63	—	—	27	30.3	6	114.6	82	171.6
1864-70	2	56.6	7	5.4	4	0.8	38	77.7

The four industrial branches of national economy specifically mentioned in the case of Prussia absorb about 90 per cent of the total capital invested in joint-stock companies; yet there is not a single factory industry represented among them. The situation is different in Bavaria where the textile industry is one of the most prominent branches of economy, absorbing capital through the formation of joint-stock companies. But in both countries the rapid spread of the joint-stock company is obvious.

\* \* \*

Side by side with this rapid growth of financial investments, in fact, another expression of it, is the increase in the size of individual industrial establishments. Banks do not invest in one-man shows but only in large concerns. True, Viebahn is right in saying\* that most of the factories in Germany even during the sixties, employed 30 to 100 workers while in Britain, at that time, they employed 100 to 500. The period in Germany of factories employing 100 to 500 men began only in the seventies; but even the average factory of 30 to 100 men was a sound basis for capitalist development. Furthermore, German industry had by now reached the stage where in large-scale industries the process of concentration could begin and the maximum stage, as to the number of establishments, had been reached. While in the United States the number of establishments in some industries, which had developed to the stage of large-scale production, such as cotton manufacture, pig iron production, etc.,† already showed stagnation or even a decline in the forties, this development took place in Germany during the fifties. The following tables give some indication of this for Prussia:‡

\* L.c., Vol. 3, p. 560.

† See this *Short History of Labour Conditions*, Vol. II, p. 34 f.

‡ *Jahrbuch*, l.c.

# NUMBER OF ESTABLISHMENTS IN SELECTED INDUSTRIES AND BRANCHES OF INDUSTRY, 1846 TO 1861

<i>Year</i>	<i>Iron and Steel Foundries</i>	<i>Chemical Factories</i>	<i>Wool Spinning</i>	<i>Cloth Factories</i>	<i>Cotton Weaving</i>	<i>Paper Factories</i>
1846	913	200	2,437	708	616	394
1849	720	257	2,061	798	608	368
1852	720	276	1,920	819	682	347
1855	657	286	1,493	796	701	336
1858	729	318	1,320	650	716	316
1861	655	196	1,157	519	351	376

In other branches of industry, still in their first vigorous growth, the number of factories grew rapidly. A good example of such an industry is of that producing "machines, including iron ships," where the number of establishments rose in the period under review from 131 to over 300; another is brick-yards, the number of which rose from 5,596 in 1846 to 7,649 in 1861.

While in many industries or single branches of industry the number of establishments remained stationary, their technical equipment was much improved and the number of employed rose rapidly.

## STEAM ENGINES IN INDUSTRY, 1846 TO 1861

<i>Year</i>	<i>Mining and Foundries</i>		<i>Grain Mills</i>		<i>Textiles</i>		<i>Machine Factories</i>		<i>Total</i>	
	<i>No.</i>	<i>H.P.</i>	<i>No.</i>	<i>H.P.</i>	<i>No.</i>	<i>H.P.</i>	<i>No.</i>	<i>H.P.</i>	<i>No.</i>	<i>H.P.</i>
1846	274	9,519	71	927	237	3,236	80	939	1,139	21,715
1849	332	13,695	95	1,111	274	3,691	91	1,354	1,445	29,483
1852	422	19,662	172	2,007	365	5,633	154	1,344	2,124	43,051
1855	569	24,748	337	3,566	443	6,929	201	2,048	3,050	61,960
1858	1,225	45,920	521	6,195	580	10,579	279	2,971	5,187	112,955
1861	1,528	60,387	600	8,101	738	16,152	373	4,139	6,669	137,377

Within 15 years the number of steam engines in Prussian industry rose by almost six times, and their horse-power was increased by still more. More and more powerful engines, was the motto of German industry.

It is perhaps of interest to include here an international comparison. Mulhall\* gives the following figures:

## MILLIONS OF HORSE-POWER, 1840 TO 1870

<i>Year</i>	<i>United Kingdom</i>	<i>France</i>	<i>Germany</i>
1840	0.62	0.09	0.04
1850	1.29	0.37	0.26
1860	2.45	1.12	0.85
1870	4.04	1.85	2.48

\* L.c.

The superiority of Britain in 1840 was overwhelming, over both France and Germany. France, in her turn, disposed of about double as much horse-power as Germany. Between 1840 and 1850, both France and Germany—and Germany more than France—rapidly increased their horse-power, while Britain lost ground. Between 1850 and 1860, Germany almost reached France's level, while again France developed more quickly than Britain. Ten years later, Germany had passed France and was only 40 per cent behind Britain.

While we shall later study productivity per worker\* in more detail, it is interesting to show the technical progress in German industry by one more example: the machinery used in one branch of the textile industry:

WEAVING LOOMS IN FACTORIES, 1846 TO 1861

<i>Year</i>	<i>1846</i>	<i>1849</i>	<i>1852</i>	<i>1855</i>	<i>1858</i>	<i>1861</i>
Mechanical Looms ..	4,603	5,018	5,268	6,178	7,882	15,258
Hand-Looms ..	78,423	79,992	50,606	53,358	59,909	28,012
Number of Factories ..	2,529	2,636	2,691	2,826	2,666	1,900

This is a highly interesting table, though the decline in the number of handlooms is probably much exaggerated, since, especially in 1861, the census tended more and more to eliminate those who worked in their own homes for the factory owners. The table indicates rapid technical progress, illustrated by the growth in the number of mechanical looms.

The following table shows that technical progress, however rapid, was not so rapid as to lead to a decline in the number of workers employed per factory; on the contrary, the number grew because production was rising even more quickly than productivity.

NUMBER OF ESTABLISHMENTS (I), NUMBER OF WORKERS (II),  
AND NUMBER OF WORKERS PER ESTABLISHMENT (III) IN  
SELECTED INDUSTRIES AND BRANCHES OF INDUSTRY, 1849,

1855 AND 1861

<i>Year</i>	<i>Iron and Steel</i>			<i>Machines†</i>			<i>Railway Coaches‡</i>			<i>Chemicals</i>		
	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>I</i>	<i>II</i>	<i>III</i>
1849	1,197	21,833	18	188	6,198	33	56	1,484	27	257	3,449	13
1855	1,111	34,964	31	235	12,470	53	70	3,823	55	286	4,329	15
1861	1,096	44,171	40	314	20,648	66	87	6,095	70	196	3,774	19

\* See pp. 82 ff. of this book.

† Including "iron ships."

‡ Including coaches for other purposes.

All four industrial categories show a material increase in the number of workers per establishment.

No comparable figures are available for the sixties—but what material there is shows that the tendencies observed continued up to 1870, though they were generally less pronounced than during the fifties. And what holds true for Prussia also holds true for the other German states, though Prussia was advancing faster than most other states. Prussia's supremacy in Germany during the sixties and in 1870 was based not only on strength of arms and the size of territory but at least as much on the dominant position of Prussian economy which was generally more advanced and progressive than that of other German states.\*

\* \* \*

This development of industrial production was paralleled by the rapid growth of banking, transport and trade. During the 20 years, from 1850 to 1870, the mileage of Prussian railways has increased roughly three times:†

#### LENGTH OF PRUSSIAN RAILWAY SYSTEM, 1850 TO 1870

(In kilometres)

Year	Kilometres	Year	Kilometres	Year	Kilometres	Year	Kilometres
1850	3,869	1856	5,766	1861	7,353	1866	9,250
1851	4,109	1857	6,066	1862	7,718	1867	9,804
1852	4,460	1858	6,267	1863	8,081	1868	10,183
1853	4,684	1859	6,827	1864	8,247	1869	10,496
1854	4,898	1860	7,169	1865	8,654	1870	11,523
1855	5,089						

Even more rapid was the development of railway traffic and equipment. Between 1850 and 1870, the number of locomotives increased seven times, from 498 to 3,485; that of passenger coaches from 1,284 to 5,552; and that of freight cars from 6,825 to 76,824—that is more than 10 times in 20 years. As transport speeds also increased, it is not surprising that the number of passenger-kilometres rose from 417 millions in 1850 to 3,017 millions in 1870, while that of freight-ton-kilometres rose from 190 millions to 4,045 millions.

\* This also found expression in a more progressive home and foreign policy. Engels characterizes rightly Bismarck's policy in the sixties as everything but conservative and some of his acts as revolutionary. Cf. *Gewalt und Oekonomie*, etc., and *The Housing Question*, Preface to the 2nd edition.

† *Statistisches Handbuch fuer den Preussischen Staat*, Vol. II, Berlin, 1893.



The growth of the Prussian merchant fleet remained behind that of the railways. In the early forties, the Prussian fleet was not insignificant while the railways were just beginning to come into existence. While the number of ships on ocean and coastal service probably increased between 1850 and 1870 only slightly (accurate figures are not available, but I should be surprised if the increase were much more than 25 per cent), the total tonnage rose by 50 per cent or more. Thus ships were becoming bigger, like the factories.\*

The rapid growth of home trade was paralleled in the development of foreign trade. German goods, though often expensive and of bad quality, begin to come upon the world market in increasing volume. According to the very rough estimate of Mullhall, German foreign trade doubled between 1800 and 1850 and increased three times between 1850 and 1870. Figures given by Wagemann for the German Zollverein indicate an even greater rise for the latter period:†

FOREIGN TRADE PER HEAD OF POPULATION IN MARKS,

				1850 TO 1870			
Year	Trade	Year	Trade	Year	Trade	Year	Trade
1850	35.70	1855	57.30	1859	56.70	1863	62.60
1851	36.30	1856	60.90	1860	87.10	1864	63.90
1852	37.50	1857	63.90	1861	65.40	1865	66.50
1853	44.10	1858	60.30	1862	65.10	1866	88.40
1854	55.50					1870	105.70

The growth was about equal during the fifties and the sixties. If we compare German foreign trade with that of France we find that it was larger in Germany during the first third of the nineteenth century, and smaller during the second third—a very curious contrast to the industrial development. The superiority of Britain was more marked during the second third than during the first; up to the thirties British foreign trade was rarely more than double that of Germany.

The cause of what, at first sight, appears to be an incongruous relationship between the development of foreign trade and the comparative extent of capitalist production, is due at least partly

\* Cf. Hans Braemer, *Die Preussische Rhederei*, *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, Oktober-Dezember, 1870.

† See Ernst Wagemann (chief Nazi statistician to-day), *Konjunkturlehre, Eine Grundlegung zur Lehre vom Rhythmus der Wirtschaft*. Berlin, 1928, p. 277.

to the fact that agricultural (non-industrial) goods formed a considerable proportion of German foreign exports in the early nineteenth century. A country with large agricultural exports may conceivably have but a small industry, and import large amounts of industrial goods. The relation between the volume of industrial production and that of foreign trade is a complex one.

Before concluding this short survey of the general economic development of Germany between 1850 and 1870, let us glance at the financial situation. The growth of joint-stock companies already indicated the relative maturity of capitalist finance. The fifties are especially years of rapid banking development, when a number of banking institutions with considerable capital were founded in various parts of Germany. But the best indication of this development is perhaps the following survey of the amount of paper money in circulation, not covered by gold (in a period which is not characterized by what one calls an inflationary trend):\*

## BANKNOTES IN CIRCULATION, 1846 TO 1870

<i>Years</i>	<i>Million Marks</i>
1846-1850	5.73
1855	32.70
1860	106.50
1866	249.00
1870	432.30

This table not only reveals the tremendous development in finance, it also strikingly confirms our conclusions based on statistics for other economic features. The fifties were years of an abnormal growth, while the sixties were more "normal."

\*                      \*                      \*

It is obvious that the development of German economy during the 20 years under review must have had a considerable influence on the conditions of the workers. Not only must it have influenced relations between the industrial and agricultural sectors, but it is impossible for an economy to make such strides without changes in the technique of exploitation. It is with these, as well

\* Quoted from F. X. von Neumann-Spallert, *Uebersichten ueber Produktion, Verkehr und Handel in der Weltwirtschaft*. Jahrgang, 1879, p. 235.

as with general changes in labour conditions, that we shall deal in the following pages.

## 2. WAGES AND PURCHASING POWER

Our material on wages for the period now under review is considerably fuller than for the preceding one. We are now able to compute annual average gross wages for industry as a whole and for a number of individual industries. And since wages, though not solely decisive, are the most important single factor influencing the development of labour conditions, it is possible to get a more reliable statistical sketch of their development.

The following table gives an index of wages in certain industries:

### WAGES IN GERMANY, 1850 TO 1870

(1900 = 100)

<i>Year</i>	<i>Building</i>	<i>Metals</i>	<i>Textiles</i>	<i>Wood- Working</i>	<i>Printing</i>	<i>Mining</i>	<i>Agri- culture*</i>
1850	44	43	—	—	58	54	—
1851	44	44	—	—	58	54	—
1852	44	39	—	—	58	53	—
1853	47	40	—	—	58	51	—
1854	48	44	—	—	58	56	—
1850-1854	45	42	36	—	58	54	—
1855	48	46	49	—	58	60	—
1856	49	51	47	—	58	62	—
1857	50	60	49	—	58	67	—
1858	50	59	50	—	59	70	—
1859	51	53	54	—	60	55	—
1850-1859	47	48	43	43	58	63	44
1860	52	53	56	—	60	55	—
1861	53	52	58	—	61	59	—
1862	53	53	57	—	61	60	—
1863	53	56	55	—	63	60	—
1864	53	60	53	—	63	65	—
1865	53	58	54	44	70	67	—
1866	55	58	58	48	70	69	—
1867	55	58	60	51	70	69	—
1868	57	59	61	51	70	73	—
1869	59	62	61	57	72	74	—
1860-1869	54	57	57	—	66	65	57
1870	61	66	64	62	74	77	—

\* Including Forestry.

Development in the various industries is highly interesting. Wages in the building, metal and textile industries did not move very unevenly; they determine the general average for industry. The printing industry lost something of its superiority: the spread of literacy contributed to this—though in part its relative loss in position may be only apparent, as the figures refer to piece rates, and improved production processes may have raised wages more than the above figures indicate.

If we combine the wages into two general indices, one excluding agriculture, we arrive at the following results:

## AVERAGE GROSS MONEY WAGES, 1850 TO 1870

(1900 = 100)

<i>Year</i>	<i>Industry</i>	<i>Industry and Agriculture</i>	<i>Year</i>	<i>Industry</i>	<i>Industry and Agriculture</i>
1850	45	43	1860	53	53
1851	46	44	1861	55	54
1852	44	43	1862	55	55
1853	46	44	1863	55	55
1854	48	47	1864	56	56
1855	49	48	1865	56	56
1856	51	50	1866	59	58
1857	54	53	1867	59	59
1858	54	52	1868	61	61
1859	52	51	1869*	64	62

Just as in the preceding period, we observe a continuous increase of gross money wages. I have, however, mentioned before that the figures of gross wages—while yielding us important material—do not really show even what the worker takes home in his pay envelope—not to mention how he can live on the money he receives.

The importance of these shortcomings in an index of gross wages can be illustrated by a comparison of shift wages and annual earnings in the Saar district:†

\* 1870, 66 for industry only and 64 for industry and agriculture.

† The shift wages are average net earnings, that is, the difference between gross shift wages and annual earnings is even greater than the above figures indicate.

SHIFT WAGES AND ANNUAL EARNINGS IN THE SAAR  
DISTRICT, 1850 TO 1869

(In marks)

<i>Year</i>	<i>Shift Wages</i>	<i>Annual Earnings</i>	<i>Year</i>	<i>Shift Wages</i>	<i>Annual Earnings</i>
1850	1·33	386·39	1860	2·23	634·44
1851	1·34	364·61	1861	2·17	587·59
1852	1·32	375·54	1862	2·11	532·95
1853	1·29	367·01	1863	2·13	538·01
1854	1·34	381·23	1864	2·28	621·48
1855	1·57	446·67	1865	2·38	645·42
1856	1·91	543·40	1866	2·47	694·42
1857	2·38	677·11	1867	2·51	691·49
1858	2·41	685·65	1868	2·50	698·81
1859	2·23	634·44	1869	2·59	729·04

The table shows how conflicting the variations in annual earnings can often be with those in shift wages. Between 1850 and 1851 shift wages increased by 1 per cent while annual earnings declined by about 6 per cent; in the following year shift wages declined while annual earnings increased. Between 1858 and 1861 shift wages declined by about 10 per cent while annual earnings went down by almost 15 per cent.

These few examples should be sufficient to warn every statistician of the need of coming closer to reality, and of caution in drawing conclusions from material at his disposal, especially as far as wage data are concerned.

\*                      \*                      \*

If we examine the wages paid in individual industries we can discern a new development, especially towards the end of the period. When we surveyed our meagre wage data for the preceding period we concluded that the main difference between wages was probably based on locality and not industry. But, towards the end of the period from 1850 to 1870, we can say that the chief difference is probably now based on industry.

This does not mean that the well-paid workers in one industry receive much lower wages than the well-paid workers in another. But it does mean that the low-paid workers in one industry receive considerably less than those in another.

Unfortunately, the subject of the growing disparity between wages of various industries has not received sufficient attention;



there is no account of any country, or even of some industries in one country, which treats the subject in detail. As far as Germany is concerned I believe we can say that this disparity—of whose existence to-day in highly developed capitalist countries there can be no doubt—began with the lower-paid workers in certain industries receiving less pay than those in others.\* The problem is an extremely complex one, impossible to solve with the material available for Germany. But I think it important that it be stated and studied with attention.

While during the period under review gross wages rose steadily and on the whole more quickly than during the preceding 30 years—roughly 50 per cent as compared with roughly 20 per cent—the cost of living fluctuated considerably, though not quite as much as during the preceding 30 years.

## COST OF LIVING, 1850 TO 1870

(1900 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1850	49	1855	87	1860	74	1865	71
1851	55	1856	85	1861	77	1866	75
1852	64	1857	72	1862	78	1867	88
1853	69	1858	69	1863	72	1868	89
1854	81	1859	69	1864	68	1869†	82

There are no fluctuations of over 100 per cent, as for instance between 1825 and 1847, but fluctuations during a short-term period are just as violent during this as the preceding period. On the long-term view, the development was more favourable for the workers, whose wages always, under capitalism, lag behind when the cost of living rises; during short-term periods the development was just as unfavourable from 1850 to 1870 as from 1800 to 1850. If the cost of living between 1844 and 1847 (the most rapid rise in the period 1820-1850) rose by roughly 50 per cent, we find a rise of about the same amount between 1851 to 1854. On the other hand, the rise in the cost of living between 1844 and 1847 took place in a period of depression and crisis, accompanied by large-scale unemployment, while the rise from 1851 to 1854 took place in a period of rising employment and growing business activity. Thus, even if the workers in both

\* I am not sure whether this started in the lower paying regions or generally with the lower-paid unskilled workers.

† 1870 the index is 83.

periods lost equally in purchasing power per hourly wage, their annual income moved more favourably in the latter period, because of less unemployment.

If we compare the development of wages with that of the cost of living we arrive at the following index of real wages :

AVERAGE GROSS REAL WAGES FOR ALL WORKERS,

		1850 TO 1870					
		(1900 = 100)					
<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1850	88	1855	55	1860	72	1865	79
1851	80	1856	59	1861	70	1866	77
1852	67	1857	74	1862	71	1867	67
1853	64	1858	75	1863	76	1868	69
1854	58	1859	74	1864	82	1869*	76

Real wages fluctuated considerably. In 1854, they were by more than one-third lower than in 1850; in 1858 they were by almost 40 per cent higher than in 1855. After 1858, they remained relatively stable.

Here an interesting question arises. From the above table it seems that real wages have a tendency to decline during increasing trade activity and to rise during a crisis (1857); in contrast, for instance, to the development during the preceding crisis of 1847. How is this to be explained? Partly the explanation is given above: if we took into account short-time and unemployment it would be obvious that real income increased during the up-swing phases of the trade cycle and declined during the depression and crisis.

Furthermore, the hourly or daily wages on which we base our statistics are partly based on certain standard rates and do not take into account the fact that payments were often above these rates (even as early as the fifties and sixties of the nineteenth century) in periods of increased business activity, and below them during the crisis.

Finally, to mention only one further point, not only short-time and unemployment, but also over-time payments are excluded from our computations. Not that many workers at that period received special rates for over-time; but it was becoming customary to pay them the usual hourly rate for each hour worked over-time; in the preceding period when wages were mostly paid

\* The index for 1870 is 77.

on a daily basis, a lengthening of the working day did not mean added income. But now we are dealing with a period in which the working day began to be reduced, so that the employers had an interest in basing wages upon the hour rather than the day.

If we compare the development of real wages over long-range periods, by decades or trade cycles, we arrive at the following picture:

#### AVERAGE GROSS REAL WAGES FOR ALL WORKERS

(1900 = 100)

<i>Period</i>	<i>Wages</i>
1820-1829	86
1830-1839	82
1840-1849	74
1844-1852	76
1852-1859	66
1860-1867	74

During the first trade cycle in the period under review, real wages continued to decline; during the second, we notice the first increase after 40 years of decline or stability. Many of the short-comings of our annual wage data disappear when we compress them into trade-cycle averages. The effect of not taking into account unemployment, over-time, short-time and payments above and below the rate, is negligible in this table, except for differences from one trade cycle to another; and, though these differences exist, they are much smaller than annual differences.

In order to study in more detail the methods of exploitation applied in Germany, it is useful to compare the development of real wages with that in Great Britain\* at the same period:

#### AVERAGE GROSS REAL WAGES IN GERMANY AND GREAT BRITAIN

<i>Period</i>	<i>Germany</i>	<i>Period</i>	<i>Great Britain</i>
1790-1799	—	1789-1798	58
1800-1809	—	1799-1808	50
1810-1819	—	1809-1818	43
1820-1829	86	1819-1828	47
—	—	1820-1826	47
1830-1839	82	1827-1832	48
—	—	1833-1842	51
1840-1849	74	—	—
1844-1852	76	1843-1849	53
1852-1859	66	1849-1858	57
1860-1867	74	1859-1868	63

\* See Vol. I of this *Short History of Labour Conditions*, p. 68.

In Britain, too, the early history of exploitation of the workers is characterized by a decline in real wages—and not only because of the increased proportion of lower-paid women and children. But while in Britain this phase began to come to an end in the thirties and early forties, and led to a rise in real wages in the fifties and sixties, in Germany it came to an end in the sixties.

It was not until the sixties that other methods became more general in Germany; among them the intensification of working processes combined with a shortening of the working day and a lowering of the percentage of illiterate and child labour in the factories. If we compare the general economic development of Germany with that of Great Britain it is only natural that Germany should also lag behind in methods of exploitation—though by no means in the harshness of their application. The interesting fact is not the time-lag but the similarity of the pattern.

\* \* \*

Before concluding this survey of real wages and purchasing power we give place here to some interesting observations on the standard of living in the once famous article by L. Jacobi, in an official Prussian review, on wages in Lower Silesia.\* Jacobi's conclusion, for the period between the end of the forties and the middle of the sixties, is that wages have risen more than prices and that conditions among the workers have improved. This undoubtedly is true, as the late forties were years of severe depression and the middle sixties were years of labour shortage. But we are interested here not so much in Jacobi's studies of real wages, as in his studies of the actual cost of living for working-class families as compared with their income.

One hundred years ago, the County of Landeshut was well known as a centre of the German linen industry, as it had been for long and still is. According to Jacobi, the cost of living for a family in the county was 120 Thaler and in the town 150 Thaler.

\* The article was published in the *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 1868, and was often quoted in the economic literature of the nineteenth century. To-day it is, of course, forgotten, as nobody in Germany has shown any serious interest in the statistical history of labour conditions there since my father gave up his studies in 1914.

Jacobi found, however, that the average worker's income was lower than this minimum. But, he claimed, the difference was made up, as "these people usually spend nothing on heating, as they get permission to collect wood in the forests"; as to clothing "this entails slight cash expenditure, as they mostly get it by begging." As to food, they obviously need but little, as, if there is not enough, they simply starve.

In the County of Glogau, Jacobi found that the earnings of husband and wife cover only about two-thirds of the cost of living for a working-class family. The gap, he says, must be bridged either by means of some especially strenuous piece-work or child labour. But frequently even this does not suffice; then the only solution he offers is: "savings—usually by eating less than sufficient food, or at the expense of health, especially that of the children—unless one finds a dishonest way of earning something."

One more quotation, this time referring to the County of Liegnitz: "The working people usually have not enough means to buy food for more than their very immediate needs; the worker who can stock up enough food for a week is in a comparatively favourable situation."

However, this information on the relation between the cost of living and the family earnings is not sufficient. What is the value of this minimum budget, with which wages are compared? He describes the food allowance of a family of five, including three children, in the town of Greifenberg as follows:

"Their means are insufficient for meat. The food consists chiefly of potatoes and bread two or three times a day; and of the latter there is often not enough." The foods in the budget are: potatoes, bread, coffee, chicory, rye (which is roasted and used as coffee substitute), butter (50 grammes per head per week), herrings and salt. No meat, no sugar—nothing but the above items. And at the end of his survey of Greifenberg, Jacobi remarks: "If the earnings are lower, less must be consumed, and unfortunately people must really starve." Such were conditions in the middle of the sixties.

In conclusion it is interesting to examine earnings. Jacobi assumed that building-trade workers were also engaged in home weaving in poor weather. Weavers, on the other hand, supple-



ment their earnings in summer by night-watching in orchards. Children of six collect wood so that their parents do not lose valuable working time. In this way, the workers obtain an income which, as we have seen, is still insufficient to guarantee them even a low standard of living, even if they are employed during the whole year (another assumption on the part of Jacobi).

In other parts of Germany conditions were better; even in Lower Silesia there were skilled workers in the towns who lived better. But it would be wrong to regard Lower Silesia as an isolated distressed area of Germany. There were many working-class families who lived no better, and many all over Germany who lived worse.

### 3. PRODUCTIVITY OF THE WORKER, INTENSITY OF WORK AND INDUSTRIAL ACCIDENTS

The method and degree of the exploitation of the worker is to a certain extent determined by the development of productivity, and, reciprocally, the method of exploitation affects the development of productivity.

During the early stages of industrial capitalism the workers' productivity was increased chiefly by the introduction or improvement of machinery; if we measure productivity per hour we find many factors making for a declining trend: the lengthening of the working day, the increasing employment of women and children in factories and mines, and a deterioration in health, partly due to over-exertion during the long working day and partly to the decline in real wages, resulting in malnutrition.

The total volume of production during this period increased because of a rapid growth in the number of employed workers and because of developments in machine production. Our information on the early development of production is too scanty to enable us to determine, firstly, whether production increased chiefly because of more workers being employed, or because of the progress of technique; secondly, what was the effect of counterbalancing factors—of which the most important ones have just been mentioned—in hindering the increase in the workers'

productivity. Since Marx raised these problems few people have shown any interest in them, and these few did not pursue them very thoroughly. Perhaps the following pages, which contain highly interesting material relating to this question, may help to persuade some research workers to collect the available material and put before us their first tentative conclusions.

For Prussia, I have found some material which enables us to construct an index of productivity for two important industries, mining and iron, over a considerable number of years. The data refer to production per worker and per year. They are not absolutely accurate, but they are reliable enough to prevent us from rejecting the startling results.

### PRODUCTION AND PRODUCTIVITY PER WORKER IN HARD COAL MINING, 1787 TO 1870

(1850 = 100)

#### I. THE DORTMUND DISTRICT (TONS AND INDEX)\*

<i>Year</i>	<i>Production</i>	<i>Productivity</i>	<i>Year</i>	<i>Production</i>	<i>Productivity</i>
1787	123,929	73	1812	343,568	82
1788	67,970†	?	1813	336,083	98
1789	131,907	81	1814	332,741	79
			1815	387,592	97
1790	136,628	86	1816	427,709	95
1791	231,788‡	85	1817	433,458	96
1792	176,676	99	1818	423,900	99
1793	180,723	92	1819	403,924	94
1794	160,319	91			
1795	161,868	90	1820	425,364	92
1796	196,354	101	1821	408,417	91
1797	200,471	104	1822	394,695	84
1798	209,831	96	1823	393,325	83
1799	227,928	102	1824	407,721	83
			1825	436,548	87
1800	230,558	114	1826	455,347	88
1801	200,961	117	1827	467,467	86
1802	208,986	115	1828	498,971	89

\* I have no data for Prussia or Germany as a whole during this period. But productivity figures, based on production and employment data for the Bonn District and the Saar territory, suggest that, on the whole, the development was similar in most coal-fields. In the Saar territory productivity, 1850 equalling 100, has developed as follows:

1816-1820 103; 1821-1825 102; 1826-1830 116; 1831-1835 122; 1850 100

In the Bonn district, productivity developed similarly to that of the Dortmund district; basing the index on 1832 as 100, the indices for Bonn and Dortmund are:

1823-29: Dortmund 87, Bonn 89; 1830-1836: Dortmund 100, Bonn 99

† Misprint in source: I cannot reconstruct the right figure.

‡ Misprint in source: for my computations I used the figure of 131,788.

I. THE DORTMUND DISTRICT (TONS AND INDEX)—*continued*

<i>Year</i>	<i>Production</i>	<i>Productivity</i>	<i>Year</i>	<i>Production</i>	<i>Productivity</i>
1803	200,980	99	1829	521,960	95
1804	380,024*	95			
1805	391,871	98	1830	571,434	98
1806	352,723	95	1831	626,014	101
1807	338,295	84	1832	675,157	100
1808	338,608	89	1833	760,954	108
1809	350,885	92	1834	766,777	108
			1835	784,293	101
1810	368,679	90	1836	745,124	84
1811	348,702	85			

## II. DORTMUND DISTRICT AND PRUSSIA AS A WHOLE (TONS AND INDEX)

<i>Dortmund</i>			<i>Prussia</i>	
<i>Year</i>	<i>Production</i>	<i>Productivity</i>	<i>Production</i>	<i>Productivity</i>
1837	867,923	88	10,393,479	92
1838	996,170	93	11,541,839	94
1839	1,006,992	93	12,213,160	91
1840	990,352	85	12,752,679	87
1841	1,091,749	90	13,910,153	91
1842	1,130,121	92	14,900,932	91
1843	1,079,585	87	14,168,441	89
1844	1,195,965	91	15,543,687	93
1845	1,265,239	92	17,332,651	96
1846	1,345,012	95	18,312,529	97
1847	1,439,559	92	19,145,461	96
1848	1,337,322	89	17,571,581	91
1849	1,383,718	88	18,197,132	92
1850	1,665,662	100	20,767,246	100
1851	1,804,427	96	22,672,566	98
1852	1,955,937	98	25,788,268	102
1853	2,186,648	97	28,688,165	98
1854	2,718,674	104	34,056,274	101
1855	3,316,523	106	40,739,129	105
1856	3,575,299	93	44,288,456	103
1857	3,724,840	93	47,363,716	105
1858	4,006,270	94	52,086,479	108
1859	3,888,482	98	48,604,182	108
1860	4,365,834	114	53,283,626	119
1861	5,069,733	123	58,896,261	124
1862	5,806,834	134	65,394,470	136
1863	6,395,461	152	71,654,578	144
1864	7,578,077	150	82,759,713	149
1865	8,629,475	153	92,838,875	150
1866	8,678,607	150	95,276,302†	146
1867	9,976,683	154	104,856,494	147
1868	10,645,529	160	113,374,226	154
1869	11,461,114	164	118,509,199	153
1870	11,812,529	173	116,290,587	155

\* Enlargement of territory covered.

† Larger territory.

During the first 30 years of the nineteenth century, coal production increased by almost 100 per cent, after having increased at about double that rate in the last 15 years of the preceding century. In each of the two following decades, 1830 to 1840 and 1840 and 1850, coal production almost doubled, and thus rose at roughly three times the rate of the preceding three decades; between 1850 and 1860 it increased to more than two and a half times the 1850 level; from 1860 to 1870 it increased more than twice again. Thus, since 1830 we have a rapid and almost uninterrupted increase in coal production. As far as the amount of coal production is concerned, the whole period from 1787 to 1870 can be subdivided into three periods:

From 1787 to 1800: a rapid increase of coal production;

From 1800 to 1830: a considerable rise;

From 1830 to 1870: renewed rapid increase.

Is there any parallel between the development of production and productivity? Comparing the two sets of figures, we realize that it would not be possible to establish similar phases for the development of productivity. This does not mean that there is no relation whatever between the total amounts of output and productivity. It means that productivity in the long run is influenced by other factors than output, which are more important as a whole.

In the following table we show the development of productivity in the Dortmund district and in Prussia by decades and general trade cycles; such averages make it easier to survey the development as a whole:

#### THE DEVELOPMENT OF PRODUCTIVITY, 1787 TO 1870

<i>Period</i>	<i>(1850 = 100)</i>	
	<i>Dortmund</i>	<i>Prussia</i>
1787-1796	90	—
1797-1806	104	—
1807-1816	88	—
1817-1826	90	—
1825-1832	93	—
1832-1843	94	—
1844-1852	93	96
1852-1859	98	104
1860-1867	141	139

As far as productivity is concerned, there was really only one trend during the years under review—except for the last few years, which introduced a new period. From the end of the eighteenth century to the fifties of the nineteenth century, productivity per worker in hard-coal mining remained about stable. While production increased by about 20 times, productivity remained stable. An extraordinary state of affairs! We know that technical improvements in coal mining during these two-thirds of a century were considerable. The first steam engines were introduced in the Dortmund district at the end of the eighteenth century. By the middle of the nineteenth century their number had increased to about 150, and 10 years later their number had more than doubled. Numerous other measures for increasing productivity were introduced. Yet, productivity did not increase.

The simple fact is that the negative factors—increased working hours and consequent fatigue, lower real wages and the consequent lower vitality, in brief, the effects of the specific methods of exploitation—were so potent that the measures introduced to increase productivity were only able to maintain it at its level. True, production increased considerably, but by employing more workers longer hours, not through increased productivity of the individual.

Only in the sixties did the trend become reversed. During the sixties the working day became shorter, vestiges of feudal mining conditions were discarded, and, of course, further improvements in technique had taken place. The employers reversed their method of exploitation which now became intensive: they sought to get more and more out of each worker in the same number of hours. German capitalism had entered the modern phase of exploitation.

But before we pursue this subject further, there is one question to be answered. Perhaps coal mining was unique in this respect? Let us, therefore, examine the development of productivity in copper mining.

The development in copper mining was not very different from that of hard-coal mining. Production before 1850 did not increase as much as that of coal mining, but it rose at about the same rate between 1850 and 1870. Productivity remained about stable from 1790 to 1850, rose somewhat during the fifties, and



PRODUCTION AND PRODUCTIVITY IN COPPER MINING,  
HALLE/SAALE DISTRICT, 1792 TO 1870 (Tons)

<i>Production</i>			<i>Production</i>			<i>Production</i>		
<i>Year</i>	<i>Total</i>	<i>Per Employee</i>	<i>Year</i>	<i>Total</i>	<i>Per Employee</i>	<i>Year</i>	<i>Total</i>	<i>Per Employee</i>
1792	21,681	18	1819	11,166	11	1845	27,132	11
1793	19,715	17				1846	28,672	11
1794	17,948	18	1820	14,039	12	1847	31,261	12
1795	17,862	16	1821	17,307	14	1848	32,574	13
1796	20,891	18	1822	20,326	16	1849	31,945	12
1797	16,210	14	1823	19,016	16			
1798	16,226	15	1824	18,728	15	1850	33,814	13
1799	15,228	13	1825	19,489	13	1851	41,855	15
			1826	20,896	13	1852	49,620	17
1800	15,981	13	1827	20,280	11	1853	49,795	16
1801	13,749	11	1828	21,178	11	1854	49,221	19
1802	18,354	13	1829	20,745	11	1855	51,831	16
1803	16,065	12				1856	56,228	17
1804	16,320	12	1830	20,377	11	1857	54,001	16
1805	12,156	10	1831	22,878	11	1858	55,893	16
1806	17,084	13	1832	19,632	12	1859	59,123	16
1807	19,640	15	1833	19,008	11			
1808	20,495	15	1834	20,256	12	1860	62,926	17
1809	17,442	13	1835	22,133	13	1861	60,039	16
			1836	21,738	13	1862	65,689	17
1810	17,162	9	1837	27,354	12	1863	73,532	19
1811	15,987	8	1838	27,793	12	1864	87,220	22
1812	21,614	12	1839	28,671	18	1865	97,465	23
1813	20,791	14				1866	99,532	24
1814	12,573	9	1840	24,000	12	1867	118,718	26
1815	18,486	*	1841	25,770	12	1868	142,688	28
1816	13,221	11	1842	28,154	12	1869	157,676	30
1817	12,856	12	1843	29,340	12			
1818	17,211	17	1844	28,971	12	1870	156,421	31

more rapidly during the sixties. In 1870 productivity was almost twice that of the fifties. The following table gives productivity in copper mining by decades and trade cycles:

PRODUCTIVITY IN COPPER MINING, 1792-1870

<i>Period</i>	<i>Tons</i>
1792-1801	15
1802-1811	12
1812-1821	12
1822-1831	13
1825-1832	12
1832-1843	13
1844-1852	13
1852-1859	17
1860-1867	21

\* Figure for employees a misprint; no productivity figure can be computed,

The picture presented of copper mining is substantially the same as that of coal mining: productivity increased only at the end of the period under review. Some other branches of mining may show a somewhat different development; productivity in iron-ore mining had a tendency to increase during the first half of the century; but here too the greatest increase came only with the sixties. I believe that one is justified in saying that productivity in mining as a whole remained fairly stable during the first half of the nineteenth century and began markedly to increase only in its seventh decade.

Fortunately, we also have data on the development of productivity in other fields, though they do not go back as far as those on coal and copper mining. Let us note this short survey of productivity in pig iron and in iron wire production in Prussia from 1837 to 1870:

PRODUCTION PER WORKER IN PIG IRON AND IRON WIRE MANUFACTURE (ZOLLZENTNER PER WORKER), 1837 TO 1870

<i>Year</i>	<i>Pig Iron</i>	<i>Iron Wire</i>	<i>Year</i>	<i>Pig Iron</i>	<i>Iron Wire</i>
1837	548	138	1854	801	251
1838	490	96	1855	618	255
1839	516*	103	1856	606	263
			1857	631	181
1840	498	97	1858	683	199
1841	506	101	1859	735	173
1842	586	121			
1843	623	128	1860	912	179
1844	451	138	1861	781	206
1845	269	139	1862	965	250
1846	229	113	1863	1,091	271
1847	527	103	1864	1,149	259
1848	608	83	1865	1,169	288
1849	529	101	1866	1,354	242
			1867	1,433	263
1850	457	155	1868	1,548	353
1851	555	176	1869	1,695	304
1852	574	208			
1853	536	215	1870	1,727	275

This table is immensely interesting for two reasons: first, it shows that, during the period under review, the development of productivity per worker in pig iron was not very different from that in coal and copper mining; secondly, it shows the develop-

\* Assuming the officially given figure of 2,248 employed to be a misprint for 3,248.

ment of productivity to have been very different between pig iron and iron wire production. Both facts become more obvious if we compress the figures for individual years into trade cycle averages (the period 1837 to 1843 being an incomplete cycle) :

PRODUCTIVITY IN PIG IRON AND IRON WIRE PRODUCTION  
(IN ZOLLZENTNER), 1837 TO 1870

<i>Period</i>	<i>Pig Iron</i>	<i>Iron Wire</i>
1837-1843	538	112
1844-1852	467	135
1852-1859	648	218
1860-1867	1,107	245

Productivity in pig iron production showed no increase during the 17 years from 1837 to 1853—practically the same as in the case of coal and copper mining. During the following years, however, it increased rapidly, and by 1870 was almost three times as high as during the best years of the first period. Again, as in the case of coal and copper mining, this does not mean that there were no technical improvements in the production of pig iron. On the contrary, there were many. But the factors associated with methods of exploitation were so strong that they counter-balanced the progress in technique.

Productivity in iron wire production, on the other hand, increased during the first period under review. Productivity per worker rose by about 20 per cent between 1837-1843 and 1844-1852; during the following trade cycle it increased by more than 50 per cent, and rose again by more than 10 per cent during the following cycle. Here we have a case where the progress of technique overcame the effects of extensive exploitation.

If we had the figures for industry as a whole and for more single branches of industry, we would probably find that during the period from 1800 to 1870 the majority of factory industries showed an increase of productivity per worker; but that a surprising number of industries and occupations showed no such increase up to the end of the fifties because of the counter-balancing factors of extensive exploitation. Furthermore, it would not be surprising to find in a number of industries, during the first 60 years of the century, a definite decline of productivity per working hour even if there was an increase per worker and

per day, since the drastic lengthening of the working day, combined with considerable progress in technique, may lead to increased productivity per day but a decline per hour.

In this section of our study of the productivity of labour during the first seven decades of the nineteenth century in Germany, the important lesson to be learned is the effect of the methods of extensive exploitation upon the development of productivity, an effect which was such that, unless technical progress was considerable, it led to stagnation or a decline in the productivity per worker.

\* \* \*

In this connection, it is useful to study another problem: productivity within the trade cycle. Such a study should really be based on statistics of productivity per hour—but even our rough productivity figures give some valuable results. For they show that when production declines there is a tendency for productivity to decline too, and that when it increases there is a tendency for productivity to increase also. Furthermore, we note that fluctuations within the trade cycle are very much greater in some industries than in others, though the tendencies of the fluctuations and their connection with the development of production are the same.

The tendency for productivity to increase when production rises and to decline when production decreases is due to a number of factors. Firstly, when production declines, when business is slackening, over-time tends to disappear, just as during increasing trade activity the working day becomes longer.\* Secondly, during the nineteenth century employers tended to hang on to their best workers in periods of rapidly dwindling business even if there was relatively little work for them, so that they would be on hand when business improved. Thirdly, there probably is a certain tendency for statistical methods to show a somewhat greater decline than corresponds to reality, as in a number of cases workers may be counted as employed during the whole year, even if they sometimes worked short-time or were not employed for a whole week, etc.

\* See, for instance, *Die Entwicklung des Niederrheinisch-Westfälischen Steinkohlenbergbaus in the zweiten Hälfte des 19. Jahrhunderts*, Vol. XII, Part 3, p. 64.

These are probably the chief factors influencing the development of productivity during the trade cycle, as shown in the above tables. To this must be added another factor which in some industries may occasionally play an important rôle: the employer is much more inclined to install machinery or improved machinery during periods of the trade upswing; and, therefore, the influence of technical progress upon productivity is greater during the upward than during the downward phases of the trade cycle. On the other hand, in the period of extensive exploitation, a tendency to shorten the working day during a slack period tends to increase the worker's productivity per hour and also per day. But the second factor probably played a smaller rôle during the first sixty years under review than did the former, and, while they must be mentioned here, neither are of very great importance.

In cases of rapid increase or decline in productivity, while in some instances we find a close relationship between productivity and production, in others they are by no means so closely associated. The relationship is close, for instance, in iron wire manufacture and copper mining; but less so in coal mining and pig iron. While the figures are not accurate enough to compute correlation coefficients,\* the relative closeness of the movement of production and productivity in copper mining and iron wire manufacture may be indicated as follows.

Productivity in copper mining increased during the years under review eight times by 15 per cent or more; there was in six cases an increase of production by 20 per cent† or more. Productivity declined nine times by 15 per cent or more and in six cases there was a decline of production by 12 per cent or more.

Productivity in iron wire manufacture increased during the years under review five times by 20 per cent or more; there was in three cases an increase of production by 25 per cent or more.

\* I should like to say here that, while the computation of correlation coefficients is in itself a very good device, it is used much too often in labour and social statistics; the material available being usually much too unreliable to permit the use of such fine methods.

† As production had a tendency to increase while productivity remained stable, I compared an increase of productivity of at least 15 per cent with an increase of production of at least 20 per cent; similar considerations apply to the other comparisons.



Productivity declined five times by 15 per cent or more and in four cases there was a decline of production by 12 per cent or more.

In connection with the question of variations in productivity during the trade cycle, we must devote a moment to a related problem, although we lack material for thorough consideration. This is the question of the intensity of work. I think we can say that changes in the intensity of production usually followed changes in the amount of production, just as, during the period under review, increasing production was accompanied by increasing productivity, so did increased production also cause increased intensity of work.

During slack periods, employers were inclined to keep their key workers and let them work less strenuously, rather than dismiss them and possibly lose them for good. Increasing production, then, was naturally accompanied by an intensification of work. It should also be remembered that the increasing use of machinery, and the introduction of improved machinery and new devices, often meant an intensification of the labour process and, as these were usually introduced during periods of increased trade activity, this made an additional reason for increased intensity of work during periods of rising production.\*

\* \* \*

It is perhaps most useful to study the incidence of accidents in connection with production, productivity and intensity of work, for they are closely related, though other factors, such as the length of the working day, the workers' general health, and so on, are also contributory causes of accidents. For most countries it would be impossible to provide worth while material on industrial accidents during the period under review. For Germany, however, we are able to present a few interesting figures, relating to fatal accidents in mining, which enable us to study the question in some detail. It is obvious, of course, that even this material is meagre, and fails to give us insight into the problem as a whole.

\* From this it becomes obvious that when we speak of a period of extensive exploitation this does not mean that during this period there was no increase in the intensity of work at all; it can only mean that the "intensive" means of exploitation did not play the same rôle as the extensive.

There is also an interesting table referring to non-fatal accidents in coal mining, which, however, cannot be taken as representative simply because it refers only to one important coal field and we have no material relating to other districts. Yet it has some significance as there is no reason for thinking it does not represent ordinary conditions in the Aix-la-Chapelle coal fields, even if it is not representative of coal mining as a whole.

NON-FATAL ACCIDENTS IN HARD-COAL MINING IN THE  
ESCHWEILER DISTRICT, 1814 TO 1853

<i>Period</i>	<i>Wounded per Hundred</i>	<i>Days of Incapacitation per Wounded</i>
1814-1823	14·6	18·5
1824-1833	16·9	18·7
1834-1843	14·1	16·0
1844-1853	12·6	15·6

There are few definite conclusions to be drawn from this table, except that there was probably little change in the period under review in the frequency and severity of accidents. There seems to have been some increase in the second decade, probably due to the lengthening of the working day. During the two following decades there seems to have been a small decline in both frequency and severity. The few figures we possess for years following 1853 indicate a further decline in frequency but a rapid increase in severity.

In a capitalist régime, figures as to non-fatal accidents are always unreliable. The statistical findings are marred by too many disturbing factors, such as the desire of an injured worker, during periods of unemployment, to return to his job as soon as possible, even if not completely recovered; or even to stay on the job, if possible, when injured. It is, therefore, preferable to study fatal accidents, which are accompanied by no such error. The following table gives fatal accidents per thousand workers\* in Prussian mines:

\* For some of the problems connected with the study of accidents see this *Short History of Labour Conditions*, Vol. I, pp. 111-113, and Vol. II, pp. 161-163 and 205-215.

A SHORT HISTORY OF LABOUR CONDITIONS  
FATAL ACCIDENTS IN PRUSSIAN MINING

(Per 1,000 Workers)

<i>Years</i>	<i>Accident Rate</i>	<i>Years</i>	<i>Accident Rate</i>
1821-1840	2.35	1860	1.94
1841-1850	1.68	1861	1.97
1851	1.52	1862	1.95
1852	1.64	1863	1.86
1853	1.75	1864	2.47
1854	1.53	1865	2.31
1855	1.78	1866	2.34
1856	2.10	1867	2.31
1857	1.93	1868	2.62
1858	1.64	1869	2.34
1859	1.92	1870	2.56
1851-1860	1.77	1861-1870	2.27

During the forties the fatal accident rate seems to have been lower than during the two preceding decades. This impression, however, may not be justified, as the figures for 1821 to 1840 refer to coal mining only, and those for the following decades to mining as a whole; the fatal accident rate, during the period under review, was generally higher in coal mining than in the other branches of mining. It is therefore doubtful whether the fatal accident rate was actually lower in the forties than between 1820 and 1840.\* On the other hand, we can assert with confidence that the accident rate in the sixties was definitely higher than in the preceding decades—higher than in the forties and fifties as the comparable figures show, and higher than in the twenties and thirties, which show an almost equally high death rate although referring only to the more dangerous occupations.

For the years since 1852 we have special coal mining figures at our disposal and it is interesting to study their development.

FATAL ACCIDENTS IN PRUSSIAN COAL MINING

(Per 1,000 Workers)

<i>Years</i>	<i>Accident Rate</i>	<i>Years</i>	<i>Accident Rate</i>
1821-1840	2.35	1855	2.11
1852	1.64	1856	2.36
1853	2.15	1857	2.10
1854	1.67	1858	1.63

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\* Furthermore, unemployment was much higher during the forties than during the preceding decades, which also contributed to a lowering of the accident rate per worker and year, while that per worker and shift may have been different.

FATAL ACCIDENTS IN PRUSSIAN COAL MINING—*continued**(Per 1,000 Workers)*

<i>Years</i>	<i>Accident Rate</i>	<i>Years</i>	<i>Accident Rate</i>
1859	2·39	1865	2·78
1860	2·34	1866	2·79
1852-1860	2·04	1867	2·84
1861	2·47	1868	3·51
1862	2·44	1869	2·87
1863	2·26	1870	3·15
1864	3·08	1861-1870	2·82

This table looks somewhat different. The figures are still not quite comparable, as those for 1821 to 1840 include soft-coal mining which, according to contemporary reports, was more dangerous, especially in the earlier period, while those for 1852 and onwards refer to hard-coal mining only. While, therefore, average figures for 1852 to 1860 show a greater decline in the accident rate than actually occurred—if indeed there was any decline—the figures for 1861-1870 reveal the rapid and tragic increase in the accident rate in a most conservative manner. If we compute an average for the period of 1821-1840 and 1852-1870, we find a slight increase in the fatal accident rate from 2·35 per thousand to 2·45—an increase which was actually greater, as the former figure includes the more dangerous soft-coal mining.

Looking at the figures for each year we note the rapid and pronounced increase of fatal accidents in the sixties. Bearing in mind that the sixties also saw a rapid increase in productivity, and the fact that the sixties also witnessed a considerable decline in the number of hours worked per shift, we have here a truly complex situation which calls for brief explanation.

The sixties were the decisive period of the change in methods of exploitation in Germany, when intensive methods replaced extensive ones. Productivity per worker was being rapidly increased; the skilled worker began to come into his own; the growing complexity of the machinery installed in factories and mines required a higher standard of education in the worker; child labour was slowly being replaced by adult labour; women workers began to be replaced by men in a number of industries. The working day was being shortened, because the employers

were concentrating on getting more out of the worker per hour—an intensification of the labour effort was being introduced.

This intensification is reflected in the rapid rise of fatal accident figures in coal mining. If we compare the development of productivity per worker with the rate of fatal accidents in coal mining the interrelation becomes quite clear:

PRODUCTIVITY AND FATAL ACCIDENTS IN HARD-COAL  
MINING, 1852 TO 1870

<i>Years</i>	<i>Productivity</i> <i>1850 = 100</i>	<i>Fatal Accidents</i> <i>Per 1,000</i>
1852-1856	102	1.99
1857-1861	113	2.19
1862-1866	145	2.67
1867-1870	152	3.09

If we add the fact that, in the years preceding the fifties, neither individual productivity nor, as far as we know, the fatal accident rate showed a tendency to increase markedly, the relation between the two factors—in a period when safety measures were hardly even elementary and in an industry in which a rapid rise of productivity was partly, at least, coupled with increased intensity of work—becomes obvious. A rapid rise in productivity is accompanied, because of a considerable increase in the intensity of work, by a marked increase in accidents.

Unfortunately we have to be satisfied with this general comparison in a single industry as there is no material for other industries available, and even for this industry we have no data for the increase of productivity per shift. An increase in productivity, not over a long sequence of years but from one year to another, may be due to more shifts being worked or to more coal being raised per shift (sometimes even on a shortened shift).

Now, if production per worker rises simply because more shifts were being worked per year, intensity may not have increased although productivity has. It is necessary, therefore, in order to make a closer study of the relations between productivity, intensity of labour and fatal accident frequency, to have at our disposal data of productivity per shift, or, better still, per hour, and accident data per shift or, better still, per hour. As these data are not available, further investigation into the problems involved is not possible for the period reviewed here.



But the data presented in this section, dealing with productivity and accidents, are amply sufficient to show that in the sixties German capitalism entered upon a new period of development for which the way had been prepared by the rapid rise in the fifties of production generally, and of capital goods in particular; and also to show that labour conditions, while continuing to deteriorate, underwent a change owing to a variation in the methods of exploitation, as the data on the rise of real wages had already clearly indicated. Almost a generation later than in Britain, German capitalism entered the sphere of intensive exploitation, with all the attendant suffering for the workers which this phase entails.

#### 4. HOURS OF WORK AND SOCIAL LEGISLATION

Our information on the average number of hours worked in German industry during the period under review is very meagre. It is impossible to construct a rough index of hours worked, as others have done for the United States, and even so inadequate a picture as we provide for Britain is out of the question. We can present only a few isolated facts and a general impression of trends.

In the official Prussian statistical review Jacobi writes:\* "The length of the working day is a specially dark aspect of labour conditions in our country; and the question of help through legislative means must be raised seriously." Jacobi states that in the mid-sixties the medium working day in Lower Silesia was of 11 to 12 hours, excluding rest pauses. When two shifts were worked, the day shift was from 6 to 12 and from 1 to 7 o'clock, while the night shift lasted from 7 in the evening to 6 in the morning, with a quarter of an hour's rest. Rarely were shifts shorter, more often, he says, they were considerably longer. In the textile industry, he mentions a working day of up to 16 hours, excluding rest pauses.

While these working days were very long indeed, they were somewhat lower than in preceding decades. It would have been impossible to find a region in Germany in the fifties or forties, where the 12-hour day was customary.

The shortening of the working day was more noticeable in

\* *Zeitschrift des Koeniglich Preussischen Statistischen Bureau*s, 1868, p. 331.

the mining industry. While the working shift—not counting the journey from the surface to the coalface and the return—was about ten to eleven hours in the Ruhr territory\* during the fifties, it was 8 to 9 hours only in the sixties; workers above ground had a 12-hour working day in the sixties. In Upper Silesia the working day in some mines was shortened by up to 40 per cent and more during the sixties.†

All this does not apply to home workers for industry who worked from the moment they got up to the moment they went exhausted to their beds and who worked from early childhood until old age.

But while the working day in Germany was still long by comparison with countries such as Britain and the United States, there is no doubt that it was considerably reduced during the sixties after a slow decline in the fifties in some industries and regions.

\*                    \*                    \*

While, in accordance with changing methods of exploitation, the working day was markedly shortened in the sixties, the introduction of new social legislation took place in the early fifties, as an aftermath of the revolutionary movement. On May 16, 1853, the child protection law in Prussia was strengthened; children under 12 were not allowed to work regularly in factories, and those between 12 and 14 were permitted to work only for 6 hours per day. The penalties were increased so that employers who within five years violated the law three times could, at the discretion of the judge, be stopped from employing children; and employers who committed six violations were prohibited from employing children for three months.

In three administrative regions factory inspectors were employed, one for each, to watch over the enforcement of the law. A study of their reports shows that, until the passing of the law of 1853, the protection of children had been completely ineffective. The introduction of factory inspection in a very small part of the country made relatively little difference. The first factory inspector in the Aix-la-Chapelle region, for instance,

\* See the above quoted *Die Entwicklung des Niederrheinisch-Westfaelischen Steinkohlenbergbaus, etc.*, Vol. XII, Part 3, pp. 64 to 76.

† *Zeitschrift fuer das Berg-, Huetten- und Salinenwesen, etc.*, Vol. 21, p. 147.

was dismissed in 1857 because of inability to carry out his work, and his successor, a good man it seems, fought, on the whole vainly, for the enforcement of the law, having against him a solid front of employers, local authorities and catholic clergy, not infrequently aided by the parents, who needed the extra money the children earned, in order to feed the family.

In Bavaria, about the same time (July 16, 1854), child labour legislation was somewhat improved without becoming very much more effective. Saxony initiated legislation for the protection of children only in 1861. Thus ends the history of child labour legislation in Germany until 1869, when the Nord-deutsche Bund began to introduce legislation on the Prussian model—which was the most advanced in Germany—into all the states in the Bund. Add that Bavaria slightly improved legislation for the protection of workers against the ill effects of chemicals (April 8, 1863), and that Saxony increased somewhat the effectiveness of anti-truck legislation in 1855 and we may conclude our account of the main features of social legislation in Germany from 1850 to 1870. Alphons Thun ends his account of social legislation in Prussia\* with the remark: "Rich as is this period in beginnings capable of further development, the years 1855 to 1869 lack such development; new legislation is almost nil; existing legislation has to be kept alive with an effort against the storm of petitions to abolish it."

This does not mean that no changes took place during the period under review. While official statistics of child labour are scarce and unreliable, there is no doubt that the percentage of children employed in factories and mines, and that of women in a number of industries requiring especially heavy work, declined in the late sixties. The reason is closely connected with the change in the pattern of exploitation—concentration on intensive, in place of extensive, methods. The working class played its part in bringing about the shortening of the working day and the decline of child labour; but on the whole it was too weak to make its weight felt in Germany in the same way as, for instance, in Britain or France during the corresponding phases of their history.

\* Alphons Thun, *Beitraege zur Geschichte der Gesetzgebung und Verwaltung zu Gunsten der Fabrikarbeiter in Preussen*, *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 1877.

Perhaps we can best conclude this survey of labour conditions and social legislation during the fifties and sixties with a quotation from Jacobi: "Convicts are forbidden to spin with calves' hairs, because their health suffers from such work; this kind of work is now left to the free workers."\*

As during the forties, we now find in the sixties that convicts' conditions are praised as compared with those of free but hungry workers. Nothing more need be added to show how conditions among the workers continued to deteriorate, for the forties were regarded as a specially bad decade for German business while the sixties were regarded as prosperous!

## APPENDIX TO CHAPTER II

The index of production is based on the sources given in the Appendix to Chapter I, as far as the years 1850 to 1860 are concerned. For the years from 1860 on, the index of the *Institut fuer Konjunkturforschung* was used. The index of mining and iron production, for which I was able to compute annual figures, runs for the years 1850 to 1860 as follows:

### PRODUCTION IN MINING AND IRON MANUFACTURE

1850 TO 1860

(1860 = 100)

Year	Mining	Iron
1850	46	41
1851	49	43
1852	53	48
1853	60	57
1854	73	71
1855	83	81
1856	96	95
1857	105	101
1858	106	101
1859	93	92
1860	100	100

\*                      \*                      \*

The sources for the figures on production and employment from which in turn those of productivity were constructed are: Coal mining in the Dortmund district, M. Reuss, *Mitteilungen aus*

\* L.c., p. 331.

*der Geschichte des Koeniglichen Oberbergamtes zu Dortmund und des Niederrheinisch-Westfaelischen Bergbaus, Zeitschrift fuer das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, Vol. 40; for Prussia as a whole see the annual reports in the same source; copper mining in the Halle/Saale district, *150 Jahre Preussischer Bergverwaltung im Mitteldeutschen Bergbau*, same source, Vol. 73; pig iron production and wire production, annual reports, same source.

\* \* \*

The figures for non-fatal accidents in the Eschweiler district are taken from Huyssen's fine study on labour conditions, "*Beitraege zur Kenntniss der Lage der Berg- und Huettenleute*" in the above-mentioned *Zeitschrift*, Vol. 9; the data on fatal accidents are taken from the same source, Vols. 1, 10 and 30.

\* \* \*

The wages indices are based on the following statistics, giving wages in Mark and Pfennig:

### I. WAGES OF BUILDING TRADE WORKERS

#### A. MASONS

Year	Leipzig*	Rostock*	Hamburg*	Rhineland†	Chemnitz*	Glauchau*	Barmen‡
1850	8.88	12.38	14.40	—	—	—	—
1851	8.88	—	14.40	—	—	—	—
1852	8.88	—	—	—	—	—	—
1853	10.80	—	—	—	—	—	—
1854	10.80	—	—	—	—	—	—
1855	10.80	12.38	—	5.47	—	—	—
1856	10.80	—	15.30	4.88	—	—	—
1857	10.80	—	—	5.28	—	—	—
1858	10.80	—	—	5.65	—	—	—
1859	12.00	—	—	5.40	—	—	—
1860	12.00	12.38	—	5.56	11.00	—	—
1861	—	—	15.72	5.75	—	—	—
1862	—	—	—	5.21	—	—	—
1863	—	—	—	5.20	—	—	—
1864	—	—	—	5.30	11.50	—	—
1865	—	13.13	19.80	5.66	11.00	10.80	2.85
1866	—	—	—	5.68	—	—	3.17
1867	—	—	16.20	5.04	—	11.50	3.45
1868	—	13.13	18.00	5.56	15.00	11.40	3.45
1869	14.52	15.00	18.00	5.80	13-16.50	11.00	3.57
1870	—	15.00	18.00	6.00	13-16.50	12.00	3.92

\* Per week.

† Dollars per fortnight.

‡ Dollars per week.



I. WAGES OF BUILDING TRADE WORKERS—*continued*

## B. CARPENTERS

<i>Year</i>	<i>Hamburg*</i>	<i>Rostock†</i>	<i>Berlin*</i>	<i>Bremen*</i>	<i>Chemnitz†</i>	<i>Magdeburg*</i>
1850	—	12·38	—	—	—	—
1851	—	—	—	—	—	—
1852	—	—	—	—	—	—
1853	2·40	—	2·25	—	—	—
1854	2·63	—	—	—	—	—
1855	2·63	12·38	—	—	—	—
1856	2·63	—	—	—	—	—
1857	2·63	—	—	2·25	—	—
1858	2·63	—	—	—	—	—
1859	2·63	—	—	—	—	—
1860	2·85	12·38	—	—	11·00	—
1861	2·85	—	—	—	—	—
1862	2·85	—	—	—	—	—
1863	2·85	—	—	—	—	—
1864	2·85	—	—	—	11·50	—
1865	—	13·13	—	—	11·25	2·00
1866	—	—	—	—	11·63	2·00
1867	—	—	—	—	12·00	2·00
1868	—	13·13	2·25	2·75	12·75	2·00
1869	3·00	15·00	3·00	2·75	10·75	2·05
1870	3·00	15·00	3·00	3·03	11·00	2·25

## C. UNSKILLED WORKERS

<i>Year</i>	<i>Hamburg*</i>	<i>Rostock*</i>	<i>Year</i>	<i>Hamburg*</i>	<i>Rostock*</i>	<i>Barmen‡</i>	<i>Magdeburg*</i>
1848	1·43	—	1860	—	1·50	—	—
1849	—	—	1861	—	—	—	—
			1862	—	—	—	—
1850	1·50	1·50	1863	—	—	—	—
1851	1·50	—	1864	—	—	—	—
1852	—	—	1865	—	1·56	2·14	1·50
1853	—	—	1866	—	—	2·30	1·50
1854	—	—	1867	2·10	—	2·50	1·50
1855	—	1·50	1868	2·25	—	2·61	1·75
1856	1·80	—	1868	2·25	1·69	2·85	1·75
1857	—	—					
1858	—	—	1870	2·25	1·69	3·03	1·75
1859	—	—					

## II. WAGES OF METAL WORKERS

<i>Year</i>	<i>Essen*</i> <i>Krupp</i>	<i>Chemnitz†</i> <i>Fitters</i>	<i>Machine</i> <i>Carpenters</i>	<i>Augsburg§</i> <i>Machine</i> <i>Factory</i>	<i>Munich§</i> <i>Locomotive</i> <i>Factory</i>
1850	1·25	—	—	—	—
1851	1·30	—	—	522	—
1852	1·36	—	—	401	—

\* Per day.

† Per week.

‡ Dollars per week.

§ Per year.

II. WAGES OF METAL WORKERS—*continued*

<i>Year</i>	<i>Essen*</i>	<i>Chemnitz†</i>		<i>Augsburg‡</i>	<i>Munich‡</i>
	<i>Krupp</i>	<i>Fitters</i>	<i>Machine Carpenters</i>	<i>Machine Factory</i>	<i>Locomotive Factory</i>
1853	1·33	—	—	435	—
1854	1·46	—	—	480	—
1855	1·68	—	—	473	—
1856	1·96	—	—	480	—
1857	1·99	—	—	641	—
1858	1·97	—	—	633	—
1859	2·01	—	—	507	—
1860	2·06	13·50	13·50	504	—
1861	2·08	—	—	480	—
1862	2·16	—	—	489	—
1863	2·22	—	—	696	—
1864	2·28	13·50	13·50	759	—
1865	2·37	13·00	13·50	655	—
1866	2·41	13·00	13·50	688	—
1867	2·54	13·20	13·50	633	668
1868	2·69	13·50	14·00	610	710
1869	2·86	14·50	11-14·00	651	777
1870	3·08	15·00	11-14·00	732	742

## III. WAGES OF TEXTILE WORKERS

<i>Year</i>	<i>Wurttemberg*</i>				<i>Meerane†</i>
	<i>Cotton Spinning</i>	<i>Wool Spinning</i>	<i>Cotton Weaving</i>	<i>Cloth Manufacture</i>	<i>Weavers</i>
1850-1855	—	—	—	—	7·50
1850-1859	1·43	1·50	1·37	1·43	—
1860-1863	—	—	—	—	7·50
1860-1865	1·89	1·89	1·71	1·89	—
1872	2·37	2·66	2·34	2·20	—

<i>Year</i>	<i>Augsburg‡</i>		<i>Rhineland§</i>		<i>Muehlhausen†</i>	
	<i>Cotton Spinning¶</i>	<i>Mech. Spinning and Weaving</i>	<i>Cotton Spinners</i>	<i>Industry Weavers**</i>	<i>Cotton Spinners</i>	<i>Industry   Weavers</i>
1841	—	384	—	—	—	—
1845	—	278	—	—	—	—
1850	—	372	—	—	—	—
1855	—	—	7·47	2·17	15·00	9·00
1856	—	—	7·50	1·97	—	—
1857	—	—	7·68	2·10	—	—
1858	—	—	7·37	2·29	—	—
1859	—	—	7·24	3·11	—	—

\* Per day. † Per week. ‡ Per year. § Dollars per fortnight.

|| Muehlhausen was at that time French; the figures are given here for purposes of comparison with the years following 1870.

¶ Factory outside the town.

\*\* Printing department.

Year	<i>Augsburg*</i>			<i>Rhineland†</i>		<i>Muehlhausen‡</i>	
	<i>Cotton Spinning  </i>	<i>Mech. and Weaving</i>	<i>Spinning</i>	<i>Cotton Spinners</i>	<i>Industry Weavers¶</i>	<i>Cotton Spinners</i>	<i>Industry§</i>
1860	482	—	—	7·57	3·43	16·00	9·50
1861	—	—	—	8·04	3·76	—	—
1862	—	—	—	7·94	3·42	—	—
1863	—	—	—	7·14	3·27	—	—
1864	—	—	—	7·07	3·14	—	—
1865	430	435	—	7·02	3·30	16·00	11·00
1866	—	—	—	7·43	4·00	—	—
1867	—	—	—	8·00	3·94	—	—
1868	—	—	—	8·13	4·01	—	—
1869	—	—	—	8·34	4·03	—	—
1870	—	497	—	8·15	4·11	18·00	12·50

Year	<i>Barmen</i>		<i>Dresden Sebnitz</i>		<i>Chemnitz</i>		<i>Waldenburg*</i>	
	<i>Cotton Dyers</i>	<i>Industry** Knitters</i>	<i>Cotton</i>	<i>Weaving‡</i>	<i>Worsted Spinners</i>	<i>Hand- Weavers‡‡</i>	<i>Linen Men</i>	<i>Industry†† Women</i>
1859	—	—	9·00	8·00	—	—	—	—
1860	—	—	9·00	8·00	9·12·00	7·50	—	—
1861	—	—	9·00	8·00	—	—	—	—
1862	—	—	—	—	—	—	—	—
1863	—	—	—	—	—	—	—	—
1864	—	—	—	—	9·13·50	7·00	—	—
1865	3·09	4·28	—	—	10·50	9·00	300	255
1866	3·57	4·28	—	—	10·50	9·00	—	—
1867	3·57	4·28	9·00	10·00	11·25	9·00	330	255
1868	3·57	4·28	9·00	10·00	12·00	9·00	—	—
1869	3·57	4·28	9·00	10·00	11·25	9·00	360	270
1870	3·92	4·64	—	—	12·00	9·00	—	—

## IV. WAGES OF WOOD WORKERS

Year	<i>Werttemberg§§</i>		<i>Barmen   </i>	<i>Chemnitz‡</i>
	<i>Joiners</i>	<i>Piano Factories</i>	<i>Carpenters</i>	
1850-1859	1·40	2·17	—	—
1860-1865	1·71	2·74	—	—
1865	—	2·66	2·50	9·00
1866	—	—	2·85	9·00
1867	—	—	3·21	9·00
1868	—	—	3·21	9·00
1869	—	—	3·21	12·00
1870	—	—	3·45	14·00

\* Per year.

† Dollars per fortnight.

‡ Per week.

§ Muehlhausen was at that time French; the figures are given here for purposes of comparison with the years following 1870.

|| Factory outside the town.

¶ Printing department.

\*\* Dollars per week—the figures for 1871 to 1875 are: dyers—4·28; 4·28; 4·52; 4·64; 4·64; knitters—4·64 in each year.

†† Wages for 1871, 1872, 1873 and the beginning of 1874 are: men—390; 420; 450; 480; women—285; 300; 315; 330.

‡‡ Cloth weavers.

§§ Per day.

||| Dollars per week.

## V. WAGES OF PRINTING TRADE WORKERS\*

<i>Year</i>	<i>Berlin</i>	<i>Halle</i>	<i>Kassel</i>	<i>Leipzig</i>	<i>Munich</i>	<i>Stuttgart</i>	<i>Wurzburg</i>
1850	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1851	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1852	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1853	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1854	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1855	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1856	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1857	0·25	0·21	0·23	0·22	0·25	0·20	0·20
1858	0·25	0·21	0·23	0·23	0·25	0·20	0·20
1859	0·25	0·24	0·23	0·23	0·25	0·20	0·20
1860	0·25	0·24	0·23	0·23	0·25	0·20	0·20
1861	0·25	0·24	0·23	0·23	0·25	0·23	0·20
1862	0·25	0·24	0·23	0·23	0·25	0·23	0·20
1863	0·25	0·24	0·24	0·23	0·25	0·23	0·23
1864	0·25	0·24	0·25	0·23	0·25	0·23	0·23
1865	0·30	0·27	0·25	0·28	0·25	0·29	0·23
1866	0·30	0·27	0·25	0·28	0·25	0·29	0·23
1867	0·30	0·27	0·25	0·28	0·25	0·29	0·23
1868	0·30	0·27	0·25	0·28	0·25	0·29	0·23
1869	0·34	0·30	0·25	0·28	0·25	0·29	0·24
1870	0·34	0·30	0·25	0·29	0·27	0·29	0·26

## VI. WAGES OF MINERS†

<i>Year</i>	<i>Hard-Coal Mining Saar</i>	<i>Mining Aachen</i>	<i>Iron-Ore Mining Left Rhine Bank</i>	<i>Year</i>	<i>Hard-Coal Mining Saar</i>	<i>Mining Ruhr</i>
1850	2·00	1·54	1·48	1860	2·22	1·95
1851	2·01	1·52	1·46	1861	2·17	2·20
1852	2·00	1·63	1·23	1862	2·12	2·25
1853	1·95	1·49	1·25	1863	2·13	2·25
1854	2·20	1·98	1·45	1864	2·27	—
1855	2·20	2·01	1·68	1865	2·23	—
1856	1·93	1·98	1·62	1866	2·46	2·83
1857	2·38	2·01	2·03	1867	2·52	2·71
1858	2·42	2·01	2·03	1868	2·49	2·90
1859	2·22	—	—	1869	2·51	3·09

## VARIOUS HARD-COAL MINES IN THE DORTMUND DISTRICT†

<i>Year</i>	<i>Saelzer and Neuack</i>	<i>Ibbenbueren</i>	<i>Glueckauf</i>	<i>Hamburg</i>	<i>Koenigsgrube</i>
1863	2·07	—	1·70	—	2·53
1864	2·23	1·80	2·00	1·96	2·57
1865	2·25	1·80	2·21	2·01	2·62
1866	2·42	1·92	2·19	2·13	2·58
1867	2·43	1·73	2·29	2·16	2·67
1868	2·51	2·42	2·40	2·24	2·63

\* Per thousand n,

† Per shift.

VI. WAGES OF MINERS\*—*continued*

## VARIOUS HARD-COAL MINES IN THE DORTMUND DISTRICT\*

<i>Year</i>	<i>Saelzer and Neueck</i>	<i>Ibbenbueren</i>	<i>Glueckauf</i>	<i>Hamburg</i>	<i>Koenigsgrube</i>
1869	2·68	2·25	2·43	2·23	2·65
1870	2·59	2·35	2·54	2·44	2·78
1871	2·63	2·55	2·72	2·64	3·07
1872	3·06	2·88	3·11	2·82	3·49
1873	3·84	3·13	3·63	3·16	3·66
1874	3·55	2·73	3·48	3·17	3·53

<i>Year</i>	<i>Pluto</i>	<i>Consolidation</i>	<i>Koenigin Elisabeth</i>	<i>Sellerbeck</i>	<i>Altendorf</i>
1863	1·95	2·29	2·51	2·08	1·82
1864	2·14	2·32	2·68	2·31	1·98
1865	2·28	2·74	2·73	2·35	2·08
1866	2·47	2·55	2·81	2·32	1·95
1867	2·28	2·66	2·77	2·34	2·16
1868	2·25	2·74	2·74	2·38	2·28
1869	2·68	2·81	2·87	2·48	2·31
1870	2·84	2·93	3·01	2·60	2·43
1871	2·86	3·16	3·27	2·85	2·88
1872	3·33	3·85	3·43	3·07	3·21
1873	3·83	4·02	3·80	3·58	3·62
1874	3·68	3·64	3·45	3·38	3·18

## VII. WAGES OF DAY-LABOURERS† IN THE SPRING

<i>Year</i>	<i>Oldenburg</i>		<i>Eutin</i>	<i>Birkenfeld Principality</i>	
	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Men</i>	<i>Women</i>
1858	15·6	7·5	10·5	—	—
1859	12·5	6·2	10·5	14·5	10·4
1860	13·7	6·9	10·5	14·0	9·7
1861	14·4	6·9	10·5	11·7	8·9
1862	13·7	6·9	10·5	11·4	9·0
1863	14·4	6·9	12·0	11·6	9·7
1864	12·5	7·2	16·5	11·1	9·1
1865	13·3	6·9	16·5	11·2	9·0
1866	14·8	7·5	15·0	12·8	8·8
1867	14·6	7·1	15·0	11·8	8·6
1868	14·8	7·8	15·0	12·3	9·4
1869	16·3	8·4	14·2	12·6	9·2
1870	16·3	8·5	14·2	13·1	9·7

For sources for tables I to VI see the sources given after the tables of wages in Appendix to Chapter III. Wages in table VII are taken from *Statistische Nachrichten ueber das Grossherzogtum*

\* Per shift,

† Groschen per day.



Oldenburg, herausgegeben vom Statistischen Bureau, 13. Heft, Oldenburg 1872.

\* \* \*

The cost of living index for food alone developed during the period under review as follows (1900 equals 100):

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1850	53	1858	77	1865	76
1851	61	1859	77	1866	83
1852	72			1867	99
1853	80	1860	82	1868	100
1854	95	1861	87	1869	90
1855	102	1862	87		
1856	100	1863	79	1870	92
1857	81	1864	74		

For an attempt to continue the cost-of-living studies by Dieterici see *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 4. Jahrgang, 1864.

### CHAPTER III

## LABOUR CONDITIONS UNDER MATURE AND DECAYING CAPITALISM, 1870 TO 1900 AND 1900 TO 1914

### I. THE ECONOMIC BACKGROUND

SHORTLY before his death Engels wrote in an introduction\* to Marx's study, *Class Struggles in France* (1848-1850):

"History has proved us, and all who thought like us, wrong. It has made it clear that the state of economic development on the Continent at that time was not, by a long way, ripe for the removal of capitalist production; it has proved this by the economic revolution which, since 1848, has seized the whole of the Continent, has really caused big industry for the first time to take root in France, Austria, Hungary, Poland and, recently, in Russia, while it has made Germany positively an industrial country of the first rank—all on a capitalist basis, which in the year 1848, therefore, still had great capacity for expansion."

Engels explains the error in the evaluation of the expansive capacities of European industry as follows:

"A clear survey of the economic history of a given period is never contemporaneous; it can only be gained subsequently, after collecting and sifting of the material has taken place. Statistics are a necessary help here, and they always lag behind. For this reason it is only too often necessary, in the current history of the time, to treat the most decisive factor as constant, to treat the economic situation existing at the beginning of the period concerned as given and unalterable for the whole period, or else to take notice only of such changes in this situation as themselves arise out

\* The introduction is dated March 6, 1895.

of the events clearly before us, and as, therefore, can likewise be clearly seen."

From evidence to be given shortly it is obvious that Marx and Engels persisted in this evaluation when the 1857 crisis approached. But the intense study they devoted to the development of the structure of capitalist economy, and especially to the development of labour conditions and the changes in the methods of exploitation, not only made it clear to them that they had erred but enabled them to give us the first analysis of the working of capitalism in its second phase. This laid the foundation for the study and understanding of the history of labour conditions; and what remains to us is to fill some less important gaps for which no material was available at their time, or to connect certain developments of the past with the present.

When Marx and Engels studied the economic situation of Europe in 1850 Great Britain had entered the second phase of its development of industrial capitalism: the phase of the intensive exploitation of labour, of rapidly increasing productivity per hour, of the elimination of numerous factors making for retarded progress such as the lengthening of the working day and the increasing employment of women and children. Germany, France, Austria and other Continental countries were, as far as capitalist industrial production was concerned, still in the phase of extensive exploitation; of increasing production, partly, of course, by the installation of machinery, but to a considerable extent, also, by lengthening the working day and employing more workers, regardless of their particular skill and working capacity. As the new development in Britain had been a slow one, and had, by 1850, not yet affected industry as a whole, and since the statistical material available for research was extremely poor and in many respects practically non-existent, it was impossible to realize in 1850 that British industry and British methods of exploiting labour had entered a phase different from that prevailing on the Continent. It was impossible, for instance, to distinguish between the character and causes of the growth of industrial production in the forties in Germany and in Great Britain. It was not yet apparent that the growth in Britain was largely based on new methods of production and

of exploitation, while that on the Continent took place within the frame-work of the old methods. It was impossible, therefore, to foresee that the introduction on the Continent of methods of production and exploitation, developed in Britain during the thirties and forties, would give to Continental capitalism a new lease of life.

We have seen the first consequences of the introduction of these methods in Germany in the sixties. And we shall see how in the following decades, under their sign, German capitalism entered into full maturity. While the number of hours of work per day was decreasing, while child labour was declining, productivity per worker was increasing rapidly and production as a whole took great strides.

The publication of the first volume of Marx's *Capital* gave to the Labour movement a practically complete analysis of the changes which had taken place in the methods of capitalist production and exploitation. In the fifteenth chapter of the first volume of *Capital*, Marx writes:

“The immoderate lengthening of the working day, produced by machinery in the hands of capital, leads to a reaction on the part of society, the very sources of whose life are menaced; and, thence, to a normal working day whose length is fixed by law. Thenceforth a phenomenon that we have already met with, namely, the intensification of labour, develops into great importance.”

“Reaction on the part of society” means that a moment has been reached when society can no longer go on as it has done: the working day cannot be further prolonged, new methods of production and exploitation must be devised or the whole system will break down under the pressure of the revolting workers—with the alternative of going down into anarchy and barbarism.

When Marx describes the historical process of the shortening of the working day in the last pages of the tenth chapter of the first volume of *Capital*, he says:

“France limps slowly behind England. The February revolution was necessary to bring into the world the 12 hours’ law, which is much more deficient than its English original.”

He then goes on to deal with the United States. But no mention is made of Germany, where conditions, when Marx wrote this chapter, had not sufficiently ripened for him to state definitely, on the basis of the little material available, that a shortening of the working day had begun.

If we now study the economico-political estimate by Marx and Engels of the situation on the Continent in 1848, we find that they were, even at that time, of the opinion that the revolutionary situation was due to the fact that "the modern productive forces and the bourgeois production forms" came "in collision with one another."\* Marx and Engels believed that the crisis years of the forties were the expression of such a collision, and when the crisis of 1857 approached, they at once expected another revolutionary upswing.†

To-day, with all the material at our disposal and with the help of the expert analyses given in *Capital* we are able to realize the clarity of insight which Marx and Engels already had in 1848 into the working of capitalist society and into the collision of the forces of society. At the same time, we are able now to describe in more detail the causes for the clash of these forces. They consisted largely in the specific forms of exploitation, on the basis of the general contradictions of capitalist economy: in the forms of capitalist production through primitive exploitation, the lengthening of the working day, the employment of an ever-increasing working force composed of men, women and children, regardless of their efficiency, the lowering of the purchasing power of the workers, regardless of their most vital needs, and so on. Society revolted against these methods of production,‡

\* *Class Struggles in France*, Chapter IV.

† See letters by Engels to Marx on April 14, 1856, and September 26, 1856, and by Marx to Engels, September 26, 1856.

‡ It is not improbable that at the end of the first period of capitalism, that is in the thirties and forties in Britain, and in the forties and fifties in France, the rate of profit realized to a considerable extent its tendency to fall during the latter phase of the upswing and perhaps also over two trade cycles; and that this tended to aggravate the economic crisis further; and that, after the change in the production and exploitation methods had been accomplished, the crisis did not become further aggravated during the nineteenth century because the rate of profit did not continue actually to fall. (Marx expected a continued aggravation of the crises; see, for instance, *Capital*, Vol. III, Book 3, Chapter 30; Engels, in a famous footnote, gives the most important reasons for the fact that the crises did not become aggravated each time they occurred



which does not mean, of course, that it did not have a chance to do away with the system as a whole.

As we know, conditions in this respect had already changed in Britain by 1848. The shortening of the working day had begun already; real wages had ceased in their downward move; British capitalists had begun to concentrate on intensive methods of exploitation. Under these circumstances, it is not surprising that the Continental revolutions did not have so strong a repercussion in Britain. In fact, it would not be wrong to say that the thirties were a more critical period for British capitalism than the late forties, because British capitalism, being far more developed than Continental capitalism, had had to change its methods of production earlier than had Continental capitalism. And it is also only natural that the revolutions of 1848 first broke out in France where capitalism was more developed than in Germany or Austria. It is also true that France had a stronger revolutionary tradition than the other countries on the Continent but it is equally true, and more important in this connection, that in France the state of society was in 1848 such that capitalism could no longer work with its present methods: the lengthening of the working day had reached a definite limit, extensive exploitation could not be increased; the people arose because society was menaced in its very existence.

These circumstances also help to explain the phenomenon of Bonapartism—a state of society in which the bourgeoisie is no longer able to govern and the working class is not yet able to seize power. And only at such a stage of capitalist development could Bonapartism again be succeeded by full bourgeois power. For the bourgeoisie, for capitalism were at the end of their staying power, if they sought to continue the methods of production based on primitive exploitation. But they could have recourse to other (also bourgeois, also capitalist) methods of production, the methods of intensive exploitation.

When we realize this we understand why Bonapartism could be followed by powerful bourgeois governments. When we

during the last third of the nineteenth century; one of them, I think, is also the change in the methods of production and exploitation. The aggravation of the crises during the twentieth century, that is during the period of monopoly capitalism, took place, of course, on the basis of the general crisis of capitalism.)

realize that, in the years following the revolution, the bourgeoisie began to change the methods of production and exploitation in France, we understand why the crisis of 1857 did not necessarily bring about a revolutionary situation. The fundamental crisis for capitalism had, to a certain extent, passed—for the time being.

In Germany, the situation was considerably more complex than in France. While Britain had already passed through the critical phase when the 1848 revolution broke out in France, Germany had not yet entered it. At the same time, a conflict was fermenting in Germany for other reasons which we have explained above: a clash between the politically suppressed bourgeoisie and the semi-feudal Junkers. Engels says rightly, in *Revolution and Counter-Revolution*, that the French revolution "hastened" the German revolution. It definitely came earlier than was required, if we consider solely the methods of capitalist production and their compatibility with the general productive forces of society. Society was not yet in a state of revolt against the specific methods of capitalist production. But it would have soon come anyway, if not for "internal capitalist" reasons, then because of the conflict between the capitalist bourgeoisie and the semi-feudal Junkers, a conflict in the specific economic field as well as on the question of the distribution of power between Junkers and bourgeoisie.

It is not surprising, therefore, that the partial economic solution in the clash of forces of the bourgeoisie and the Junkers brought by the revolution of 1848 sufficed to bring about an extraordinary upswing of production during the fifties—still with the old methods of production and exploitation, but with greater freedom for industrial capitalist methods of production to develop and with fewer feudal barriers. Nor is it surprising, therefore, that the revolution brought no marked change in the methods of production and exploitation. The great change in the methods of capitalist exploitation and production occurred, to a widely noticeable degree, only in the sixties—in form of an economic revolution from above, combined with a national revolution from above. And the full development of this second phase in the history of German capitalism took place only after the unification of Germany into a nation, after 1871. The period from 1871 to 1900 is the phase of the rapid maturing of

German capitalism, the phase in which, as Engels says, Germany grew into an industrial country of the first rank.

\*                      \*                      \*

A few figures are sufficient to indicate the rapid development of German economy in the period from 1871 to 1900. This development, it should be emphasized, was due to two factors: the new methods of production and exploitation, applied to some extent already during the sixties, and the consummation of the attempts of the German bourgeoisie and not inconsiderable sections of the Junkers to unite the German states into a national entity.

The wars of the sixties and the first part of the war against France were wars for the unification of Germany and their success led to the formation of the German Reich. The constitutional unification of the Reich was followed slowly but surely by a unification of numerous economic and legal institutions. In the course of time one monetary unit was created in Germany, numerous commercial legal practices and laws were made uniform, and so on. It is obvious that these measures contributed very considerably to the rapid development of German national economy.

The most comprehensive index of national economic activity at our disposal is the index of production. The following table gives an index of industrial and agricultural production per head of the population by trade cycles since 1860:\*

PHYSICAL VOLUME OF INDUSTRIAL AND AGRICULTURAL  
PRODUCTION PER HEAD OF THE POPULATION, 1860 TO 1902

(1900 = 100)

<i>Trade Cycle</i>	<i>Index</i>
1860-1867	53
1868-1878	62
1879-1886	70
1887-1894	82
1894-1902	102

The rate of growth from one trade cycle to another was remarkably stable; it fluctuated between 15 and 20 per cent

\* For the construction of this index see my *Labour Conditions in Western Europe, 1920-1935*, p. 99.

and was only slightly higher in the last cycle, when it almost reached 25 per cent. The question arises: how did the rise in industrial production compare during this period with that in the preceding one with its other methods of production and exploitation? If we compute averages for two trade cycle periods (or two decades in former periods), we arrive at the following table:

# INDUSTRIAL PRODUCTION DURING THE NINETEENTH CENTURY

(1913 = 100)

<i>Trade Cycle</i>	<i>Index</i>
1801-1820	1
1821-1840	3
1841-1860	9
1860-1867*	15
1868-1886	25
1887-1902	49

It is not surprising that the rate of growth of the first few decades of industrial capitalism was not maintained, for in the early phases the erection of a few factories had already influenced the growth of production. What is surprising is the high rate of increase during the last third of the nineteenth century and especially during the last 15 years. If we compare the development of the production of capital goods and consumption goods we find the following:

# INDUSTRIAL PRODUCTION, 1860 TO 1900

(1913 = 100)

<i>Trade Cycle</i>	<i>Capital Goods</i>	<i>Consumption Goods</i>
1860-1867	11	25
1868-1878	16	35
1879-1886	25	41
1887-1894	35	56
1894-1902	54	72

During this whole period, the production of capital goods increased more rapidly than that of consumption goods. We already discovered the beginning of the shifting of gravity from the production of consumption goods to that of capital or production goods during the forties. This, to a certain extent,

\* Centre phase of transition.

is the natural consequence of the prolonged and increasing use of machinery. Naturally, also, during the first period of capitalist industrial development, machines were used to an increasing degree. But it is obvious that the change-over from the methods of extensive to intensive exploitation must accelerate the change in emphasis from the production of consumption to that of production goods. For increased intensity of work per hour and minute requires also the increased use of machinery. The combination of machines, the simultaneous serving of several machines, the acceleration of the working process by the increased velocity of the working of the machine (especially the acceleration of the conveyor belt in more recent times), facilitate an increase in the intensity of work. It is not surprising, therefore, that a long term survey of the respective production of capital and consumption goods brings us the following results:

#### INDUSTRIAL PRODUCTION DURING THE NINETEENTH CENTURY

<i>Trade Cycle</i>	<i>(1913 = 100)</i>	
	<i>Capital Goods</i>	<i>Consumption Goods</i>
1801-1820	1	1
1821-1840	2	4
1841-1860	6	13
1860-1867*	11	25
1868-1886	20	37
1887-1902	45	64

No detailed comment on this table is needed, for its meaning is clear and the change in the emphasis of production is so obvious.

Perhaps we can illustrate this shift in the emphasis of production by one more table, indicating the use of steam-power in German industry:†

#### USE OF STEAM ENGINES (HORSE-POWER) IN GERMANY, THE UNITED KINGDOM AND FRANCE, 1850 TO 1900

<i>Year</i>	<i>Germany</i>	<i>United Kingdom</i>	<i>France</i>
1850	260,000	1,290,000	370,000
1860	850,000	2,450,000	1,120,000
1870	2,480,000	4,040,000	1,850,000
1880	5,120,000	7,600,000	3,070,000
1888	6,200,000	9,200,000	4,520,000

\* Phase of transition from early to mature capitalism.

† Cf. Mulhall, l.c.



Between 1860 and 1870, the period of the change-over from extensive to intensive exploitation, the horse-power of steam engines increased almost three times in Germany, quickly passing the French level and reaching 60 per cent of the British level. Between 1870 and 1880, the second decade of the new period, the power of the steam engines more than doubled in Germany, leaving France in the position relative to Germany, which the latter occupied in relation to Britain ten years previously.

Before we pass on from the subject of industrial production, it will be useful to note one more indication of the growing maturity of German capitalism: the distribution of the workers over the various industrial establishments by size:

NUMBER OF ESTABLISHMENTS AND OF WORKERS EMPLOYED,

1882, 1895 AND 1907

<i>Years</i>		<i>1 to 5 Workers</i>	<i>Establishments Employing 6 to 50 Workers</i>	<i>51 to 1,000 Workers</i>	<i>More than 1,000 Workers</i>
1882					
Establishments	..	2,882,768	112,715	9,847	127
Workers	..	4,335,822	1,391,720	1,400,087	213,160
1895					
Establishments	..	2,934,723	191,301	18,701	252
Workers	..	4,770,669	2,454,333	2,595,536	448,731
1907					
Establishments	..	3,124,198	267,410	31,501	506
Workers	..	5,353,576	3,644,415	4,395,380	954,645

This table clearly shows the increasing importance of the big and giant establishments. Between 1882 and 1907, the number of workers employed by small firms increased by about one million, while the percentage of workers employed by them declined from 59 to 37 per cent. At the same time the number of workers employed in giant establishments increased four and a half times and almost reached the figure of one million. The time had passed when Viebahn\* could contrast the small size of German firms with the larger one of British establishments.

While production in general increased rapidly, and particularly

\* See p. 68 of this book.

that of capital goods, foreign trade\* did not lag far behind; it probably made greater strides than that of any other big capitalist country, with the exception of the United States. During the seventies alone, foreign trade increased in volume by little less than 50 per cent. After a sharp relapse, from 1879 to 1880, it increased during the following ten years by roughly one-third. The nineties brought a new acceleration in the rate of growth, and by the end of the century the volume of German foreign trade had increased—as compared with the beginning of the seventies—between two and a half and three times. This was less than the increase in industrial production; but it was more than the increase in the volume of Britain's foreign trade, which was around 100 per cent, and that of France, which was very little more than that of Britain.

The increase in production and in foreign trade were naturally accompanied by an expansion of the transport system, which, in the case of the merchant marine, was also accelerated by the nationalist aim of employing German ships for the German trade, and by imperialist rivalries in varied spheres of world trading. The increase in the net tonnage of the German merchant fleet was as follows:

#### GERMAN MERCANTILE FLEET

(In millions of tons)†

Year	Size of Fleet
1871	0,982
1881	1,182
1891	1,433
1901	1,942
1911	2,904

Between 1871 and 1900 the size of the fleet was about doubled. At the same time, ships became faster and improved construction increased their carrying capacity. Technical improvements are reflected in the following figures:

Sailing Ships in 1871	..	..	900,000 tons
Steam Ships in 1871	..	..	82,000 tons
Sailing Ships in 1891	..	..	693,000 tons
Steam Ships in 1891	..	..	724,000 tons

\* See *Statistisches Jahrbuch für das Deutsche Reich*, and *Vierteljahrshefte zur Konjunkturforschung*, 1. Jahrgang, 1926, *Ergänzungsheft*, 2.

† *Statistisches Handbuch für das Deutsche Reich*, Vol. I, and *Statistisches Jahrbuch für das Deutsche Reich*.

Within twenty years the tonnage of steam ships had surpassed that of sailing ships, although the latter, in the beginning of the period, was more than ten times greater than the former.

At the same time we note a slow but steady increase in the part played by the German mercantile marine in Germany's foreign trade. This share amounted roughly to two-fifths in the beginning of the period under review but had comfortably passed 50 per cent at the turn of the century.

The increasing density of the railway system in Germany is shown in the following table:\*

LENGTH OF GERMAN RAILWAYS, 1840 TO 1913

(1,000 kilometres)			
<i>Year</i>	<i>Railway Net</i>	<i>Year</i>	<i>Railway Net</i>
1840	0.5	1890	42.9
1850	6.0	1900	51.4
1860	11.6	1910	61.2
1870	19.6	1913	63.7
1880	33.8		

The German railways were to a large extent either built or taken over by the various German states; the largest of these systems was the Prussian, which, as far as it was not already state property, was practically taken over by the Prussian state in consequence of the crisis of the early seventies, and for military reasons. The crisis of the early seventies made the owners amenable to a sale to the Prussian state—thus turning serious losses into happy profits. And the state was to take the railways over because military reasons required the building and maintenance of many lines which were commercially not profitable.

A few words on some of the financial aspects of the development of German national economy and we can leave this outline of an economic background for our study of labour conditions from 1870 to 1900. We quote a few figures on the development of the German Central and State banks. The total turnover of the Reichsbank increased from 36,685 million marks in 1876 to 189,091 millions in 1900; up to 1913 the turnover increased again and reached the enormous figure of 422,340

\* *Handwörterbuch der Staatswissenschaften*, 4. Auflage, Artikel Eisenbahnen.

millions. The total note circulation in the Reich increased between 1876 to 1900 from 991 million to 1,608 million marks, while wholesale prices during the same period remained on the whole below the 1876 level. That is, the note circulation rose rapidly during a period of stable prices. During the following period, from 1900 to 1913 the note circulation almost reached a figure of 2,753 millions, while wholesale prices increased relatively little. The volume of bills dealt with by the Reichsbank amounted to 4,140 million marks in 1876, to 9,904 millions in 1900, and to 12,695 millions in 1913.

Many more figures could be given to indicate the rapid growth of German national economy during this relatively most healthy development of German capitalism, freed to a considerable extent from the fetters of semi-feudalism, not yet in the stage of decay, and thriving on the benefits of national unification. But the above is, within the framework of this book, sufficient to form a well discernible background for our study of labour conditions.

\* \* \*

With the beginning of the twentieth century German economy enters a new phase of its development. The phase of all-out production through intensive exploitation and rapidly increasing productivity had lasted barely a third of a century. It was almost a hot-house growth. As an industrial power, Germany had overtaken France, and also Great Britain in some respects—steel production, for instance—and produced roughly as many industrial products per head as the United States. The rate of its development had surpassed that of Britain, and it seemed only a question of time when Germany and the United States would be the two biggest industrial powers.

But not only had production, trade and finance developed more rapidly in Germany than in any other country of Europe. After the considerable delay in entering the second phase of industrial capitalism, Germany was preparing to enter the third and final period, the period of monopoly capitalism, if not as the first at least in a dead heat with the other big capitalist countries. While still at the beginning of the second phase of industrial capitalism, the third phase began to be prepared.

The large firms in the electrical, chemical, coal, iron and steel and other industries began more and more to dominate industrial policy within their respective spheres. Lenin\* gives the following outline of the development of monopoly capitalism and imperialism:

“Thus the principal results in the history of monopolies are: 1. In the sixties and seventies, the highest, furthestmost stage of development of free competition with monopolies as barely discernible embryos. 2. After the crisis of 1873, a period of wide development of cartels; but they are still the exception. They are not yet durable. They are still a transitory phenomenon. 3. The boom at the end of the nineteenth century and the crisis of 1900–1903. Cartels become one of the foundations of all economic life. Capitalism has become transformed into imperialism.”

This development we also find reflected fully in the history of German capitalism, both in its sequence, and in accordance with the dates Lenin gives. Thus, while Britain and the United States began to develop “monopolies as barely discernible embryos” between twenty and thirty years after entering the second phase of industrial capitalism, Germany produced them at about the same time as she entered the second phase. The “embryos” in Germany were so well developed that in the coal, iron and steel, and chemical industries they could be fairly easily discerned. Their growth in Germany was also furthered by a high tariff policy and—a factor which has been sorely neglected in economic research†—by a system of regulating patents in such a form that it gave special protection to the big firms and their research, and made collaboration among them through some form of cartel very desirable.

Under these specially favourable conditions, monopoly capitalism in Germany grew with such rapidity that in some respects it even ante-dated the development pointed out as characteristic of the big industrial countries in general by Lenin. Even before the beginning of the third phase on a world scale,

\* *Imperialism, The Highest Stage of Capitalism*, Chapter I.

† Although Lenin called attention to its importance more than a quarter of a century ago!



there were cartels in Germany which had lost their "transitory" character and had come to stay, and had arrived at the stage where their influence would be most strongly felt in the basic industry of that time, the coal industry. Before the boom in the nineties, the coal and coke industries already had their established cartel organizations and in the chemical and electrical industries a few firms, chiefly through their patent system, controlled production, while the sheer magnitude of some of the firms in the iron and steel industry gave them some of the characteristics of cartels.—

A good illustration of the development of German industry between 1870 and 1914 is furnished by the formation of joint-stock companies. The following table gives the number of joint-stock companies formed and the amount of capital invested in them:

#### JOINT-STOCK COMPANIES, NUMBER AND CAPITAL,

1871 TO 1914\*

Year	Number	Capital†	Year	Number	Capital†	Year	Number	Capital†
1871	207	759	1886	113	103	1900	261	340
1872	479	1,478	1887	168	128	1901	158	158
1873	242	544	1888	184	194	1902	87	118
1874	90	106	1889	360	403	1903	84	300
1875	55	46				1904	104	141
1876	42	18	1890	236	271	1905	192	386
1877	44	44	1891	160	90	1906	212	475
1878	42	13	1892	127	80	1907	216	260
1879	45	57	1893	95	77	1908	151	163
			1894	92	88	1909	179	231
1880	97	92	1895	161	251			
1881	111	199	1896	182	269	1910	186	260
1882	94	56	1897	254	380	1911	169	236
1883	192	176	1898	329	464	1912	179	245
1884	153	111	1899	364	544	1913	175	217
1885	70	53				1914	119	322

The first thing which strikes one is the extraordinary sensitiveness of these figures to changes in the trade situation. After the victorious war of 1870/71 there was an orgy of new big industrial ventures. Never again, in the period under review, did number and capital reach the amount of 1872. If we put together the

\* 1871 to 1906, computations by Christians in the *Deutsche Oekonomist*, January, 1905, 1906, 1908; 1907 to 1914 official Reich statistics, see *Statistisches Jahrbuch für das Deutsche Reich*, 1908 ff.

† Million marks.

years in which the number of joint-stock companies formed passed the 100 mark and in which at the same time the average amount of capital invested per company passed the one million mark, we arrive at the following distinct phases:

1871 to 1873

1888 to 1890

1895 to 1900

1904 to 1914

The first group of years, 1871 to 1873, are the high-water mark of the period of free competition, coinciding in Germany with the full development of the new methods of exploitation, of the first fruits of becoming a united nation, and the formation of large companies. The second series of years, 1888 to 1890, are the closing years of a period in which monopolies and cartels did not as yet play a marked rôle in German economy, in which large production units (without monopoly influence as yet) had come to stay, and in which the benefits of national unity still had the freshness of maturity. The third period, from 1895 to 1900, is the beginning of the transition phase in which the structure of German capitalism underwent transformation into monopoly capitalism. The years from 1904 to 1914 suffice to make Germany into a highly monopolized country. Before the outbreak of the world war 1914-18, the following conditions prevailed.

German chemical industry was organized into two large cartels which had eliminated mutual competition chiefly through patent agreements;

Germany's coke and coal industry was cartellized; the Rhenish-Westfalian syndicate, for instance, controlling over 95 per cent of that district's hard-coal production;

The German electro industry was organized into two large concerns both dominating most of the smaller firms;

German cement industry was cartellized regionally with full price control and considerable control over production;

German iron and steel industry was not cartellized; but the few big firms dominated the industry and came from time to time to *ad hoc* understandings.

To this must be added the concentration in banking. The five biggest banks in Berlin disposed of about half of all bank

deposits.\* Together with their affiliated institutions they controlled more than four-fifths of the total banking capital. The two biggest, the Deutsche Bank and the Disconto-Gesellschaft, had together in 1914 a capital of 550 million marks, and together with the Dresdner Bank, can be said to have been strong enough to dominate the German financial market. As Lenin said:† “Again and again, the last word in the development of banking is—monopoly.”

Closely connected with this inner development was the external expansion of German capitalism. Colonies had been “acquired” and—much more important in the case of Germany—large amounts of capital were exported and profitably invested, partly wherever good profits were expected immediately, partly on a long view basis of financial penetration and economic domination of certain countries and regions. No reliable estimates of foreign capital investments are available—in contrast, for instance, to France and Britain. But it is not improbable that, while at the beginning of the twentieth century they were still only about half of those of France and a fifth of those of Britain, in 1914 Germany’s foreign investments amounted to roughly two-thirds of those of France and half of those of Great Britain.—

The volume of industrial and agricultural production continued to increase during the first trade cycle in the period of transition at a rate not different from that in previous years. (See table on p. 125.)

During the last trade cycle only did production increase quite slowly; in fact, but for the war, the normal cycle would probably have shown stagnation, or even a decline; for this trade cycle, beginning in 1909 and cut short by the war, does not contain the crisis which always follows the boom. For the first time in the history of German capitalism we would have had a peacetime trade cycle without an increase in production, a trade cycle showing stagnation. For the first time, we notice the effects of monopoly capitalism upon capitalist production: its

\* Deposits in German credit-banks with a capital of at least one million marks rose from 371 millions in 1889 to 493 in 1895, to 1,035 in 1901 and to 2,424 million marks in 1907. (Riesser, *Die Deutschen Grossbanken und ihre Konzentration im Zusammenhange mit der Entwicklung der Gesamtwirtschaft in Deutschland.*)

† L.c., Chapter II.

tendencies to restrict production and to hinder the expansion of national economy.

PHYSICAL VOLUME OF INDUSTRIAL AND AGRICULTURAL PRODUCTION PER HEAD OF THE POPULATION, 1887 TO 1914

(1900 = 100)

<i>Cycle</i>	<i>Index</i>
1887-1894	82
1894-1902	102
1903-1909	121
1909-1914	127

If we study the development of industrial production only, we find the following:

INDUSTRIAL PRODUCTION, 1887 TO 1913

(1913 = 100)

<i>Cycle</i>	<i>Capital Goods</i>	<i>Consumption Goods</i>	<i>All Goods</i>
1887-1894	35	56	40
1894-1902	54	72	58
1903-1909	78	85	80
1909-1913	92	95	93

This table still shows a considerable increase in industrial production; but it also shows the tendency we observed in the previous one: a tendency towards stagnation and decay: the rate of increase declined and was relatively very small between 1903-1909 and 1909-1913; it might have been almost infinitesimal if there had been included in the cycle 1909-1913 a "normal" peace-time crisis.

Foreign trade, on the other hand, still continued to expand rapidly; the aggressiveness of German imperialism found full reflection in the contrast between monopoly-restrained industrial production and imperialistically driven foreign trade. The following table shows the rate of increase of Germany's foreign trade during the quarter century before the last world war:\*

\* Based on above quoted computations by the *Institut für Konjunkturforschung*.

AVERAGE ANNUAL RATE OF INCREASE IN FOREIGN TRADE,  
1887 TO 1913

<i>Trade Cycle</i>	<i>Exports</i>	<i>Imports</i>
1887-1894	2.3 per cent	4.3 per cent
1894-1902	5.1 per cent	4.0 per cent
1903-1909	4.6 per cent	5.0 per cent
1909-1914	8.9 per cent	4.6 per cent

While imports show no special tendency to increase or decrease with varying speed, exports show a growing rate of increase, reaching almost 10 per cent per year in the years immediately preceding the first world war.

Thus, the period from 1900 to 1914 was still a transition period. The monopolies had come to stay; they had begun to control German economy to an increasing degree. But the full effects of monopoly capitalism were to be felt only in the years to come.

\* \* \*

One question regarding method must be answered before we begin our detailed study of labour conditions from 1870 to 1914. In the previous volumes of this series, dealing with Great Britain and the United States, I have treated the period from 1900 to the present time—that is the period of monopoly capitalism—as one, while in the present volume I have subdivided it, and added the first years of its reign to the preceding period. Is such procedure justified?

I believe it is, and for the following reason. While it is true that the years 1900-1914 are part of the present period of monopoly capitalism—if we take into account the enormous changes which the 1914-1918 war and its consequences brought for German national economy, they belong to another period; they look almost like an aftermath of the previous period.

The effects of the war were lighter in the victorious countries than in Germany. In Britain, for instance, the change-over to the monopoly period was much sharper and more noticeable; observers of that time realized that, with the end of the "Victorian period," a new phase in the history of their country had begun. The same holds true in many respects for the United States where the effects of the war of 1914-1918 were even



lighter. In Germany, also, the impetus of the development compressed into the three decades from 1870 to 1900 still carried the national economy forward to a certain extent into the new century, concealing in part the early effects of the change to a monopoly capitalist society. For these reasons I have preferred to add the years from 1900 to 1914 to the survey from 1870 to 1900, always indicating the changes which took place in German economy at the turn of the century, rather than to begin the new chapter with 1900.

To this may be added the reason that our knowledge of labour conditions in Germany is relatively well founded for the years following the war of 1914–1918 while it is very poor indeed for the preceding years. It is hardly better for the years from 1900 to 1914 than for 1870 to 1900. Whether it be the cost of living or wages or hours of work or productivity, or almost any other important aspect in living and working conditions, our knowledge of the years before the previous world war is very restricted indeed. For this statistical reason, which by no means was the determining one, it proved a blessing to be able to deal with the period from 1870 to 1914 as one. And I think—as long as we constantly remember that we are really dealing with two periods—the structure of this history will not confuse the reader.

## 2. WAGES, PURCHASING POWER, AND THE COST OF LIVING

With the sixties, we entered upon the study of a new phase in the history of German capitalism. This new phase naturally required new methods of exploitation. For many decades real wages and the purchasing power of the German worker had declined. The sixties, for the first time, showed a definite increase in real wages. How did wages develop in the following decades, especially during the period of full maturity of German capitalism—that is from 1870 to 1900? And did the beginnings of the third phase, comprising the years from 1900 to 1914, again bring a change in the development of wages?

Let us begin with a general study of wages and purchasing power and then proceed to more detailed investigation. Wages in general moved as follows:

AVERAGE GROSS MONEY WAGES, 1870 TO 1914\*  
(1900 = 100)

<i>Year</i>	<i>Industry</i>	<i>Industry and Agri- culture</i>	<i>Year</i>	<i>Industry</i>	<i>Industry and Agri- culture</i>	<i>Year</i>	<i>Industry</i>	<i>Industry and Agri- culture</i>
1870	66	64	1885	77	81	1900	100	100
1871	68	67	1886	77	81	1901	99	99
1872	76	74	1887	79	82	1902	99	100
1873	84	81	1888	82	84	1903	100	101
1874	86	85	1889	85	88	1904	103	103
1875	85	86				1905	106	106
1876	79	82	1890	87	90	1906	112	111
1877	75	80	1891	87	91	1907	118	115
1878	74	79	1892	87	91	1908	117	115
1879	71	77	1893	86	90	1909	118	117
			1894	87	90			
1880	72	78	1895	87	90	1910	121	119
1881	72	78	1896	90	92	1911	124	122
1882	75	80	1897	91	93	1912	128	126
1883	76	80	1898	94	95	1913	133	131
1884	76	81	1899	97	98	1914†	134	132

The first thing we notice, when comparing this table with a similar one for the preceding period, is the greater flexibility of wages. This is due to a small degree to the fact that this index contains more data on actual wages paid—especially some on annual wages (and in this respect our heading “gross wages” is not correct)—than the one for the preceding years; although the index is still largely based on full-time wage rates. But it is mainly due to the fact that wages actually had become more flexible than they had been before. During the early years after the war of 1870–1871, wages rose rapidly; within a few years they increased by roughly one-third. This unprecedented rise was followed by a rapid decline, wages falling by almost 20 per cent in industry. This decline was again followed by a rise amounting, in industry, to 20 per cent during the eighties; and it continued, though at a markedly slower rate, during the nineties; again to be followed by a steady and accelerated rise in the first 14 years of the twentieth century.

Of course, nominal or money wages tell only a small part of the story. But they do tell a story; and the fact that gross money

\* For sources and methods of construction see in regard of this and the following tables, except when given in a footnote to the table itself, Appendix to Chapter III.

† Figures on wages for 1914 refer, if not specifically otherwise mentioned, only to the first half of the year.

wages were more flexible than in the earlier stages of German capitalism is important. It shows, for instance, that the workers were more able, to a certain extent, to react to changes in the trade cycle and in prices; flexible money wages pre-suppose a labour movement of a certain minimum strength. But the most important question is: did wages move higher and decline less than did prices? The answer to this question does not depend chiefly upon the strength of labour but—as long as capitalism reigns—upon the specific methods of exploitation used during the period under review.

In order to study the relative development of wages and prices we give in the following table an index of the cost of living and of gross real wages during the period under review:

COST OF LIVING AND GROSS REAL WAGES IN INDUSTRY  
AND AGRICULTURE, 1870 TO 1914

(1900 = 100)

<i>Cost of Gross Real</i>			<i>Cost of Gross Real</i>			<i>Cost of Gross Real</i>		
<i>Year</i>	<i>Living</i>	<i>Wages</i>	<i>Year</i>	<i>Living</i>	<i>Wages</i>	<i>Year</i>	<i>Living</i>	<i>Wages</i>
1870	83	77	1885	91	89	1900	100	100
1871	90	74	1886	89	91	1901	101	98
1872	94	79	1887	89	92	1902	102	98
1873	104	78	1888	91	93	1903	102	99
1874	108	79	1889	95	93	1904	103	100
1875	99	87				1905	107	99
1876	99	83	1890	98	92	1906	113	98
1877	100	80	1891	100	91	1907	114	101
1878	95	83	1892	99	92	1908	114	101
1879	93	83	1893	97	93	1909	117	100
			1894	96	94			
1880	99	79	1895	95	95	1910	120	99
1881	100	78	1896	94	98	1911	124	99
1882	98	82	1897	96	97	1912	130	97
1883	98	82	1898	99	96	1913	130	101
1884	93	87	1899	99	99	1914	130	102

The development of the cost of living robs, thus, wages of a considerable part of their flexibility. Yet, there is no doubt that real wages also showed a definite upward trend during the seventies and eighties. During the nineties real wages continued to rise, but the upward movement slowed down. With the twentieth century, a new development took place. For the first time for over a third of a century real wages no longer increased but remained stable. The monopolistic phase of capitalism had

been reached, new methods of exploitation were coming into use; and the development of real wages was deeply affected by this. While the second period under review—in contrast to the first—does not include a decline in real wages among its means of exploitation, the third period, beginning in 1900, shows in the beginning at least no further rise in real wages.

In order to survey more easily the development of real wages, let us repeat their history in a short table:

#### AVERAGE GROSS REAL WAGES BY TRADE CYCLES,

1820 TO 1914

(1900 = 100)

<i>Period</i>	<i>Index</i>
1820-1829	86
1830-1839	82
1840-1849	74
1844-1852	76
1852-1859	66
1860-1867	74
1868-1878	79
1879-1886	84
1887-1894	92
1894-1902	97
1903-1909	100
1909-1914	100

From 1820 to the end of the fifties, real wages show a tendency to decline; during forty years they decreased by more than one-quarter. But after German capitalism entered its second period, real wages increased. Not until the late eighties, however, did they again reach the level of the eighteen-twenties, having remained below it for about two-thirds of a century. After they had regained this level, there remained only about 15 years of a further rise. Once having passed the 1820-1829 level by less than 20 per cent, real wages have increased no more up to the present day (to state in advance the results of the investigation into the period after the 1914-1918 war).

While conditions in Germany were not different from those in other big capitalist countries in so far as the first period of industrial capitalism brought a decline in real wages, the second period, an increase, and the third stagnation and then once again a decline, the course of development of German working class conditions was particularly unfortunate, the second period

being so short that it barely sufficed to raise real wages to the level prevailing at the beginning of industrial capitalism, and leaving only a few years during which real wages could increase beyond this level.

\* \* \*

Before we go on to a more detailed study of the general development of wages and purchasing power, it will be useful to study the development of wages by industries.

# AVERAGE GROSS MONEY WAGES IN INDIVIDUAL INDUSTRIES AND IN AGRICULTURE, 1870 TO 1914

(1900 = 100)									
Year	Build- ing	Metal	Textiles	Wood- Working	Print- ing	Chem- icals	Trans- port	Mining	Agri- culture
1870	61	66	64	62	74	—	—	77	—
1871	62	66	63	68	79	—	—	83	—
1872	70	72	73	73	83	—	—	91	—
1873	83	80	76	73	89	—	—	99	—
1874	82	83	79	89	92	—	104	93	—
1875	79	85	82	95	92	—	99	87	80*
1876	76	79	83	—	91	—	100	78	—
1877	73	75	83	61	90	—	100	68	—
1878	72	75	83	61	90	—	89	68	—
1879	68	74	83	63	88	—	76	66	—
1880	68	75	82	65	88	—	76	69	—
1881	68	79	84	65	88	—	76	69	—
1882	72	82	82	63	88	—	82	72	—
1883	71	81	84	68	88	—	85	74	—
1884	72	82	86	68	88	—	85	73	—
1885	74	81	86	71	88	73	83	73	88†
1886	76	81	87	72	89	75	81	69	—
1887	79	81	89	74	93	82	80	69	—
1888	83	82	88	81	93	84	83	72	—
1889	87	85	87	81	93	84	92	74	—
1890	88	87	93	80	97	90	94	83	—
1891	86	89	92	82	97	91	91	85	—
1892	87	89	89	82	97	92	93	81	—
1893	86	87	93	83	97	87	92	77	—
1894	87	88	87	87	97	92	89	77	—
1895	87	89	93	88	97	91	89	77	97†
1896	88	92	93	88	99	93	91	85	—
1897	90	93	94	89	100	95	93	85	—
1898	94	95	96	92	100	88	94	89	—
1899	98	99	98	95	100	97	98	94	—

\* Average for 1870-1879.

† Average for 1880-1889.

‡ Average for 1890-1899.



AVERAGE GROSS MONEY WAGES IN INDIVIDUAL INDUSTRIES  
AND IN AGRICULTURE, 1870 TO 1914—*continued*

(1900 = 100)

<i>Year</i>	<i>Build- ing</i>	<i>Metal</i>	<i>Textile</i>	<i>Wood- Working</i>	<i>Print- ing</i>	<i>Chem- icals</i>	<i>Trans- port</i>	<i>Mining</i>	<i>Agri- culture</i>
1900	100	100	100	100	100	100	100	100	100
1901	99	98	101	102	100	100	101	98	—
1902	101	95	104	102	108	102	101	92	—
1903	104	95	103	104	108	102	102	94	—
1904	106	100	104	106	108	—	105	96	—
1905	110	102	108	110	109	103	108	99	106*
1906	114	110	110	114	110	115	114	106	—
1907	118	112	115	116	116	120	119	114	—
1908	119	109	113	120	116	123	120	114	—
1909	121	111	114	123	117	125	123	109	—
1910	126	114	116	126	117	133	127	109	—
1911	130	117	117	130	119	135	131	113	—
1912	134	118	121	133	130	138	137	119	121†
1913	139	123	124	138	129	146	141	125	—
1914	142	—	124	140	129	—	145	122	—

The growing flexibility which we observed in the wage average as a whole is even more obvious when we study wages by individual industries. In the building industry, for instance, wages increased from 1870 to 1873 by over one-third; in mining they declined between 1873 and 1877 by roughly 30 per cent; in woodworking they increased by about one-third between 1878 and 1888; since 1890 the fluctuations have been smaller and—with exceptions—there was a tendency for wages to increase steadily.

This table is even more revealing as regards the relative variability of the wage movement in the individual industries, especially during the first fourteen years of the twentieth century, years for which we have just found a relatively steady increase. Between 1900 and 1910, wages in the woodworking, chemical and transport industries increased by more than double as much as those in the metal and mining industries. By 1914, wages in the building, chemical and transport industries had increased by more than 40 per cent since 1900, while mining and metals showed an increase of just around 25 per cent. If one remembers that during this period the big mine owners and

\* Average for 1900–1909.

† Average for 1910–1914.

iron and steel magnates were in the forefront of reaction, it is not surprising that they succeeded in keeping wages down not only in terms of purchasing power but also relatively. If we remember also that trade unionism was a not inconsiderable force in the metal industry and a strong force in the mining industry, its rôle as a factor influencing the long-range development of wages, as contrasted with short-range movements, is put in the right light.

Trade unions are able to influence the development of wages during the trade cycle; they can press for a relatively more rapid increase during the upswing period, and they are able to impede the downward trend of wages during the crisis—but they are relatively powerless in influencing the long-term development of wages: withstanding the steady pressure of monopoly capitalism, or forcing the employers to abandon a certain exploitation policy. While the trade unions, for instance, are able to hasten the change-over from period one to period two by steady, determined fighting for a shorter working day, it would be wrong to attribute to their fighting strength the inauguration of the second period. While they are able to delay the change-over from the second to the third period, they cannot actually prevent capitalism from entering this period which implies no more real wage increases. While conditions are better in strongly organized industries than they would otherwise be, it is not to be expected that the unions can do much for any length of time even in affecting the relative place of a single industry among others.\* The inherent trends of capitalist development, described and analysed by Marx, Engels, and Lenin, can be transformed only by a change in society, and not by trade union activities within capitalist society.

\* \* \*

After our brief survey of the development of gross wages, we can now study in more detail the development of net wages, a study we had to omit for previous periods because of lack of statistical material on such an important aspect as the extent of unemployment, to name only one of many. And even for the

\* On the rôle of the trade unions under capitalism, see Marx, *Value, Price and Profit*, closing pages.

period here under review our material is confined to only part of the time and is not very accurate.

The following table gives the items which we are able to take into account in order to compute net wages. Year-by-year data of such factors as unemployment, days of work lost through ill-health, etc., will be given later when we study these problems in more detail. No data are available for computing net wages for a trade cycle preceding that beginning in 1887:

### DEDUCTIONS FROM GROSS WAGES, 1887 TO 1914

(In Per Cent of Wages)

<i>Period</i>	<i>Unemployment*</i>	<i>Illness†</i>	<i>Social Insurance</i>	<i>Trade Union Dues</i>
1887-1894	2.8 per cent	1.0 per cent	3.3 per cent	—
1894-1902	2.3 per cent	1.1 per cent	4.0 per cent	—
1903-1909	2.1 per cent	1.3 per cent	4.4 per cent	0.4 per cent
1909-1914	2.5 per cent	1.4 per cent	5.0 per cent	0.8 per cent

With the exception of the wage losses through unemployment, the deductions had a tendency slowly to increase in the period under review. This was due to the increasing wage losses through illness, increased social insurance payments, and the spread of trade unionism. When I first computed such wages it was argued that it was wrong to deduct trade union dues. But if it is right to compute wages at all—wages which are to a certain extent also the result of trade union effort—if it is right to include the benefits of trade unionism, one must also include its cost in money to the worker. In fact, if it were statistically possible one should also include the losses the workers had to incur through strikes and lock-outs; for nobody will deny that wages are partly the result of these forms of activities on the part of the workers. In fact, it is a serious mistake in theory, although not very important in practice, that such wage losses are excluded.

If we now make the above deductions, the development of net wages as contrasted with gross wages appears as follows:

\* Full losses, as there was no unemployment insurance.

† Assuming social insurance paying about half of the actual wage loss through ill-health.

GROSS AND NET WAGES, 1887 TO 1914

(1900 = 100)

<i>Period</i>	<i>Money Wages</i>		<i>Real Wages</i>	
	<i>Gross</i>	<i>Net</i>	<i>Gross</i>	<i>Net</i>
1887-1894	88	88	92	92
1894-1902	95	95	97	97
1903-1909	110	108	100	98
1909-1914	124	121	100	96

In the course of time the greater wage losses of the workers made themselves felt, and at the end of the period the difference between gross and net real wages amounted to almost 4 per cent. But our whole wage index would be too rough to make such computations worthwhile—were it not for two points: First, it is theoretically important to call attention to the fact that gross wages are an unsatisfactory measure of the development of wages; many more items than simply the wage rate must be taken into account in order to arrive at a satisfactory picture of the actual development of wages, especially when unemployment reduces sometimes sharply the workers' wages. And secondly, that in the post-war 1914-1918 years such computations of net wages, including those for trade-cycle periods, are necessary in order to avoid grotesque distortions of the development of wages and purchasing power, as after 1918 losses through unemployment alone considerably widened the disparity between gross and net wages, not only during the crisis, but over the trade cycle as a whole.

\* \* \*

Up to now we have studied only wage indices. It is possible, however, to get a picture of the actual development of wages in marks and pfennigs in the period under review, and to compare these wages with the actual development of the cost of living. This study enables us to observe the trend of purchasing power and to ascertain what proportion the workers actually received, of what was officially regarded as a cost of living minimum. Of course, such computations are less satisfactory than the preceding ones; yet they should not be dismissed because of that, for the results are so striking and the problems involved of such importance that they are definitely worthwhile, even if the reader be warned to take them with a large dose of salt.

The cost-of-living figures are based on what the Statistische Reichsamt calls a worker's family (five persons, including three children) expense budget. It is not officially called a minimum but is regarded as the "normal" budget of a family in work and earning "normal" wages. Actually, the cost-of-living computations are based on the expenses of better paid workers only. As the official statisticians also omitted to take into account any expenditure on trade unions and insurance, and allowed only a few pence for "cultural expenses," the computations are regarded by serious statisticians as insufficient, representing at best only a minimum.

Even the most conservative American government statistician has only a smile of contempt for the German cost-of-living computations, when he compares them with those of his own government, although he readily concedes that they are "typically European," and that the British and French computations are at least as bad or worse; adding that he cannot be expected "to make such fine nuances" in adjudging the various computations made in Europe.

One may thus sum up opinion on the cost-of-living budget as follows: it deals with a favoured group of workers, it omits certain expenses and gives too much weight to some groups of items and too little to others. If, however, we treat it as a minimum of what workers should enjoy—a minimum in the sense in which American Government labour statisticians contrast it with a health and decency standard of living—we are justified in using it as a rough gauge of living conditions of the workers, as far as they are determined by the amount of money they can spend and the prices of goods on which they spend it.

This also holds true if we take into account the specific shortcomings of such a computation in general, and with the material prepared by myself more particularly. Among these shortcomings must be mentioned my index of the cost of living with the help of which I compute on the basis of absolute figures in post-war years the actual cost of living in pre-war years. Firstly, my index of the cost of living while the best (and only one) available, is far from good; secondly, it is always a doubtful procedure to compute the cost of living backwards or forwards



if the index is as inelastic as mine (or the official one for after 1914), and allows so little for changes in the composition and quality of the goods the worker buys—changes which naturally take place over so long a period. Furthermore, the wage index, while again the best one available (there are some others available but they are too poor in quality, and cover only part of the period reviewed here) is not of first class quality. All this must be kept in mind when we examine the following figures (which pertain to industry only and exclude agriculture):

ACTUAL WEEKLY WAGES AND ACTUAL COST OF LIVING BY  
TRADE CYCLES, 1887 TO 1914 (*In marks*)

<i>Trade Cycle</i>	<i>Cost of Living</i>	<i>Weekly Net Wage</i>
1887-1894	23·80	19·40
1894-1902	24·40	21·10
1903-1909	27·30	24·90
1909-1914	31·10	28·00

In none of the trade cycles did average actual wages cover the actual cost of living. That is, the wages which a worker earned were, on the average, insufficient to rear a family on the very low level which was assumed as normal and satisfactory by the officials of the Statistische Reichsamt. Actual wages were below the cost-of-living minimum:

1887-1894	by 18 per cent
1894-1902	by 13 per cent
1903-1909	by 9 per cent
1909-1914	by 10 per cent

It would be misleading to conclude these observations without pointing out that during the period under review the intensity of work had continuously increased. That is, the worker needed progressively more in order to restore his working power. While, for instance, the cost-of-living budget may have corresponded to the needs of a worker in 1928, it would be wrong to assume that an 1887-1894 budget could be computed by simply taking into account the changes in prices, or even by allowing in addition for changes in the character of the goods on the market; one would also have to take into account the fact that the intensity of work in 1887 was lower than in 1900, 1914 and 1928. But the cost-of-living budget computed by the Statistische Reichsamt

was inadequate apart from this, so that all we can claim is that our figure for 1914 is probably less unsatisfactory than that for 1887. Consequently, it might be best to summarize our conclusions from the above tables as follows:

During the years under review, a German worker's income was—if his wife did not also work and he had no less than three children—insufficient to bring up a family; his condition improved somewhat in this respect between 1887 and 1909, but the improvement was very small, definitely smaller than the above figures indicate; and it is even possible that the increase in the intensity of work was such that it compensated for the increase of real wages. Nor have we taken into account, for instance, the deterioration in housing and other factors making for a general worsening of living conditions.

\*                      \*                      \*

It will now be of interest again to study in more detail the wages of specific groups of workers. Not this time by industry but by comparing those of the so-called labour aristocracy and the great mass of the workers. It has been possible to compute a rough index of the wages of highly skilled workers and of workers in relatively less lowly paying industries.

The following table gives a rough index of gross money wages of the labour aristocracy and of the great mass of the workers; it is impossible to compute net wages, as I have not sufficient material to ascertain how unemployment, etc., affected the various groups of workers.\*

#### GROSS WAGES OF LABOUR ARISTOCRACY AND GREAT MASS OF WORKERS, 1879 TO 1914

	(1900 = 100)	
<i>Trade Cycle</i>	<i>Labour Aristocracy</i>	<i>Great Mass</i>
1879-1886	67	87
1887-1894	79	92
1894-1902	91	97
1903-1909	107	114
1909-1914	121	130

Though the index is a very rough one, it is obvious that wages of the labour aristocracy—which were, of course, already higher

\* For methods of computation, see my *Die Entwicklung der Lage der Arbeiterschaft in Europa und Amerika, 1870-1933*.

than those of the great mass of the workers—moved more quickly up to 1900 than those of the great mass of the workers. The material basis for the development of a labour aristocracy was laid in the period after the sixties. A similar development took place in Great Britain where, however, the birth of the labour aristocracy must be dated farther back, as Britain, during the nineteenth century, was in advance of the development of Germany.\*

How was it possible for Germany to develop a labour aristocracy? True, the German labour aristocracy cannot be compared with the British, which was much larger and more powerful and whose standard was even higher above the level of the great mass of the workers. Yet, a labour aristocracy did exist in Germany, despite the absence of a mighty colonial empire, and without such favourable conditions as prevailed in Britain. The explanation is that, in spite of the fact that the extra profits from foreign investments gained by the German ruling class were relatively small as compared with those of Britain's ruling class, it was possible for them to make sufficient extra-profits—partly from foreign investments† and partly through the exploitation of cheap foreign labour within Germany‡ (Russians and Italians, chiefly)—to create a small labour aristocracy, ready to play its rôle when monopoly capitalism came to full power in the twentieth century. In a letter to Kautsky, dated September 12, 1882, Engels wrote: "You ask me what the English workers think of the colonial policy? The same as they think about politics in general. There is no labour party here, there are only conservatives and liberal radicals, and the workers enjoy with them the fruits of the British world market and colonial monopoly."

A quarter of a century later the same could be written about the German workers. When the Hereroes rebelled against the bestial German colonial policy, there were only conservatives

\* On the problem of the labour aristocracy, see Vol. I of this *Short History of Labour Conditions*, p. 69 ff.

† To them must be added extra-profits in the nineties from semi- and full-monopoly agreements, sometimes covering the whole world (e.g. the explosives cartel formed between Du Pont (U.S.A.), Vereinigte Koeln-Rottweiler Pulverfabriken (Germany) and Nobel Dynamite (England).

‡ The total number of foreign workers in 1907 was about 500,000 in industry and 280,000 in agriculture.

and liberal radicals in Germany, and the liberal radicals, under the official name of Social-Democrats, acted as all liberal radicals do in such cases: they remained "neutral," later giving as the reason that they did not have all the material at hand to form a considered judgment.

\* \* \*

Before concluding this study of the development of wages, it is necessary to make one final survey and to look at wages from an altogether different angle: the relative position of the workers within German society as a whole. How did the position of the working class develop in relation to the other classes?

The following tables give individual items from which we compute relative wages. There are first the totals of industrial and agricultural production per head of the population; and there is the relative development of the cost of living and wholesale prices which favours the employers as against the workers. And, on the other hand, there are the real wages per worker. By dividing the latter into a combination of the former factors, we arrive at something which might be called relative wages. The objections to such a computation are numerous; I have mentioned the most important ones in my study on labour conditions in Great Britain.\* But, as in the case of Britain, the results are so astounding that statistical errors, even of considerable magnitude, cannot influence the final result which shows an enormous decline in the relative position of the German worker.

The following tables give the chief items and the final result: an index of relative wages in Germany for more than half a century.

#### RELATIVE WAGES, 1860 TO 1914

(1900 = 100)

Period	Production Volume		Population	Combined Production per Head
	Industrial	Agricultural		
1860-1867	23	75	69	53
1868-1878	33	79	75	62
1879-1886	45	85	82	70
1887-1894	62	91	88	82
1894-1902	90	99	97	102
1903-1909	123	112	109	121
1909-1914	143	121	117	127

\* See Vol. I of this *Short History of Labour Conditions*, pp. 81 ff. and 95 ff.

RELATIVE WAGES, 1860 TO 1914—*continued*  
(1900 = 100)

<i>Period</i>	<i>Total Production per Head*</i>	<i>Real Wages</i>	<i>Relative Wages</i>
1860-1867	44	74	170
1868-1878	59	79	134
1879-1886	83	84	101
1887-1894	99	92	93
1894-1902	127	97	76
1903-1909	150	98	65
1909-1914	164	96	58

The index of relative wages shows that, while real wages increased during the last forty years of the nineteenth century, the relative wage position of the workers deteriorated rapidly. During this period relative wages declined by more than half. And this decline continued into the twentieth century. While there was a change in the trend of real wages with the coming of monopoly capitalism, there was no change in the trend of relative wages. The relative income of the workers in 1914 was only about one-third of what it was in 1860. The rich had become enormously richer, the national wealth of Germany had grown very much indeed, but the share of the workers in this wealth had declined rapidly, their position in national economy had become, from the point of view of income, much weaker than it had been. The relative deterioration of the workers had proceeded at a speed probably unsurpassed in any country in Europe.

\*            \*            \*

Concluding our survey of wages in Germany during the period from 1870 to 1914 we can summarize as follows:

A very important element in the changed methods of exploitation of the working class was a rise in real wages during the period from 1870 to 1900. This rise was necessary if the employers wanted to increase the intensity of work per hour and still keep the workers in a state of health which enabled them to go on working. If, in the years from 1900 to 1914, real wages did not continue to increase, this was definitely not due to a change in the trend of the intensity of work but rather a result of a "total and desperate effort" of the ruling class to

\* After treatment by the differential in the development of retail and wholesale prices. See also Appendix to Chapter III.



raise profits by all available means, regardless of the consequences (not for the proletariat because about that they have never bothered but) for the working forces at their disposal. If we call the period of monopoly capitalism and imperialism the period of capitalism in decay, such terms include also the recklessness and irrationality which characterize the thoughts and actions of a moribund body.

During the period from 1870 to 1900 the wages of a small stratum of workers—small as compared with the rest, but not so small in itself—, of the labour aristocracy in the process of formation, rose more rapidly than those of the mass of the workers. During the first fourteen years of the twentieth century, this relative improvement in the position of the labour aristocracy stopped as regards wages; if there was any change in their relative position it was probably for the worse. But this refers only to wages; the ruling class found other means to persuade at least part of the labour aristocracy to assume the rôle of reformists and compromisers.

If we measure wages by what was officially regarded a normal budget for an industrial worker's family (but what we regard as an insufficient minimum), we find that they were insufficient and no trade-cycle average reached even this poor standard. The widening of the gap between wages and the budget during the twentieth century is actually greater than the figures indicate, as they do not take into account the need for a higher standard because of the increased intensity of work.

As to relative wages, we find that they decline from trade cycle to trade cycle over the period from 1870 to 1900 as well as during the twentieth century. Relative wages are the only kind of wages which declined continuously, regardless of the specific methods of exploitation and the various phases of capitalist development. The relative position of the workers, like their absolute position, declines continuously under capitalism. But while the absolute deterioration takes place in various forms—sometimes also with real wages and purchasing power increasing—the decline in the relative position of the workers (though not, of course, its actual extent) can always be observed from a study of relative wages alone, which latter have always gone downwards.

As wages are only one of the factors determining the working and living conditions of workers, we will now study the other factors shaping their standard. In this study we must give special attention to the period from 1870 to 1900, in order to discover what are the factors over-compensating the increase in purchasing power of the workers.

### 3. HOURS OF WORK AND PRODUCTIVITY

The new phase in the history of labour conditions—that is, the change in the methods of exploitation which the sixties brought about—referred not only to the development of wages but also to many other factors, very prominent among them being the development of the hours of work. It is the decline in the number of hours of work, probably even more than the gain in real wages, which enables the employers to increase productivity and intensity of work per hour—partly through a more drastic driving of the worker per hour without any important changes in the place of work, partly through a reorganization of the production process (more machines for one worker, Taylor system, etc.), and partly through the installation of improved machinery.

The decline in the number of hours worked per day could have been noticed here and there in the fifties, following the revolution of 1848; but the effect of the revolution with respect to hours was very small indeed, and it is doubtful whether an index of hours of work per full time week would have been lower in the fifties than in the forties. Moreover, the fifties brought a rapid expansion of industrial production while in the forties many years were years of crisis. It is possible that even if in the fifties there was in some branches of industry a slight decline in the number of hours worked per normal working week the individual worker worked longer on the average than in the forties.

The sixties brought a radical change in this respect. The number of hours worked per week showed a general tendency to decline. Only two branches of national economy were excepted from this—most of the agricultural occupations and industrial work performed at home. I believe that as far as capitalist home

work is concerned, the number of hours worked per day has remained roughly the same during all the years of its existence. We find the 14, 15 and 16-hour day being worked at home in 1825, in 1875, and in 1925. The only changes in this respect applied in the first place to children who, because of the enforcement of school attendance, were freed for at least part of the day; and, secondly, the greater fluidity of labour enabled home workers in good years to obtain other work, and thus to vary their 100-hour week periods with others of shorter working weeks. As to agricultural work, no decisive change took place until after the revolution of 1918; that is, during the whole period under review the number of hours worked remained almost stationary: in 1910 the agricultural worker worked about the same hours as in 1860, and in 1860 about the same as in 1830.

For all other groups of workers the working day began to decline. This was most rapid in the better organized industries. Again an indication of the fact that, while they cannot change the structure and periods of capitalist development, the trade unions are able to accelerate certain processes. On the basis of the material which R. Kuczynski has collected,\* and some additional material from numerous sources which give a few figures here and there, we can establish with fair certainty that in 1870 building trade workers generally worked a 12-hour day; printers and cabinet makers often worked only 10 hours. But almost completely unorganized industries, such as the metal, textile and other factory industries, had to fight hard to gain the 12-hour day during the seventies, entering upon the decade with a working day which was often considerably longer.

It is possible to give a survey of the development of hours of work per day for a number of occupations during the last

#### AVERAGE HOURS WORKED PER WEEK

<i>Years</i>	<i>Building</i>	<i>Woodworking</i>	<i>Machine Industry</i>	<i>Printing</i>
1870-1879	62 $\frac{1}{4}$	57 $\frac{1}{4}$	—	57 $\frac{1}{4}$
1880-1889	61 $\frac{3}{4}$	57 $\frac{1}{4}$	67	57 $\frac{1}{4}$
1890-1899	59	56 $\frac{1}{4}$	62 $\frac{3}{4}$	54 $\frac{3}{4}$

\* Cf. R. Kuczynski, *Arbeitslohn und Arbeitszeit in Europa und Amerika, 1870-1909*.

three decades of the nineteenth century in Berlin and Nuremberg.\*

The figures are not based on a sufficient number of establishments to be regarded as a representative average even for these two cities, but they are good enough to give a rough indication of the development. The period from 1870 to 1900 began with the general introduction of the 12-hour day in industry as a whole, with some industries and occupations already having the 11-hour day, and some being on the way to gain the 10-hour day. It ended with the 12-hour day being regarded as a long working day even in the less well organized factory industries, while still normal in the smaller establishments of almost all branches of industry; with the 11-hour day quite usual in the majority of factories; with the 10-hour day firmly established in many well organized trades, such as building; and with the 9-hour day on the way to become the rule in printing, wood-working and certain other well organized trades.

In contrast to the development of wages, the new phase which began with the twentieth century did not at first bring any change in the development of the hours worked per week. The trend continued downward, especially in the best organized industries. For the last seven years under review, 1908-1914, we have a very useful official survey of the hours of work per week as fixed by collective agreements.† The number of workers covered in the last years is around 1½ millions, but less than 400,000 in 1908.

#### WORKERS WORKING HOURS PER DAY IN THE SUMMER ACCORDING TO A NUMBER OF COLLECTIVE AGREEMENTS

Year	Up to 8 Hours Per cent	More than 8 up to 9 Hours Per cent	More than 9 up to 10 Hours Per cent	More than 10 Hours Per cent
1908	1·8	30·3	64·1	3·7
1909	6·2	25·2	62·4	6·3
1910	1·3	36·0	60·7	2·0
1911	4·5	26·7	62·5	6·3
1912	7·6	30·5	57·7	4·2
1913	2·8	38·6	54·9	3·7
1914	3·5	34·2	58·7	3·6

\* Computed on the basis of data given by R. Kuczynski, l.c.

† See *Statistisches Jahrbuch für das Deutsche Reich*, 1910, ff.

While the year to year fluctuations are largely influenced by changes in the number of agreements covered, and while it is, therefore, barely possible to find a definite trend during the short number of years under review, we get a good and sufficiently accurate general picture of the working day among organized workers—and with more than 3,000,000 organized workers in 1913 their number is not small. More than half of the organized workers covered by the survey worked more than 9 hours per day. The general 9-hour working day had not yet been gained by the organized workers. But it is easy to see that a few more years of peace would have sufficed to win for the majority of them the 9-hour day or even a shorter one. For during all the years from 1908 to 1914 roughly one-third of the rapidly growing number of organized workers worked nine hours or less per day.

Of course, among the unorganized workers conditions were worse. It would probably not be wrong to add one hour per day for the unorganized workers, or at least to say that the 10-hour day was usual in big German factories and that perhaps even a majority of the factory workers worked longer than 10 hours. If we add to them the home workers and agricultural workers, we see that the average German worker worked for over 10 hours a day before the outbreak of the 1914-1918 war. Therefore, even if the above table does not show a decisive change in the number of hours worked by organized workers, it indicates a considerable decline of the average hours worked by all workers, for the increasing percentage of workers, organized in unions and working before they became organized longer hours of work, did not drive up the average number of hours worked by organized workers.

There is one more angle from which we must view the length of the working day; we have studied briefly the general development of hours of work; we have noted the difference between the length of the working day in various industries and occupations, and among organized and unorganized workers; but a very great difference in the length of the working day can also be observed within a single industry, even within the same occupation of well organized workers. The masons, for instance, were one of the best organized trades; they had already around



1900 collective agreements covering the length of the working day in over a hundred cities and districts. Yet, we find so varied a working day as shown in the following table:\*

<i>Town</i>	<i>Length of Working Week in 1900</i>			
Coepenick .. .. .	..	..	..	53 hours
Berlin .. .. .	..	..	..	53½ hours
Leipzig .. .. .	..	..	..	54 hours
Hamburg .. .. .	..	..	..	56½ hours
Schiffbek .. .. .	..	..	..	56½ hours
Fulda .. .. .	..	..	..	66 hours
Haynau .. .. .	..	..	..	66 hours
Norderney .. .. .	..	..	..	66 hours
Ruhla, Stadt .. .. .	..	..	..	66 hours

The 11-hour day without a Saturday afternoon off, and the 9-hour day with the short Saturday can be found in the same occupation in agreements made by the same trade union. And yet these differences are still small as compared with those prevailing, for instance, in coal mining.

During the period under review, the two chief coal mining areas in Germany were the Ruhr territory and Upper Silesia. In the Ruhr territory the 8-hour day for underground workers was introduced during the sixties; that is, the workers generally worked 9 hours, including their way in and out of the mines. After the spring of 1889, their working day was usually fixed at 8 hours, excluding their journey from the pit-head and back, which change, however, did not make much difference. During the following years, up to 1914, there was practically no change in the working day of the miners in the Ruhr territory. They formed a group of workers who had made a considerable gain in the beginning of the sixties, but who then for nearly half a century made almost no further step in shortening the working day. In Upper Silesia the situation was quite different. The following table gives a detailed survey of the length of the working day of Upper Silesian miners.†

\* Cf. R. Kuczynski, l.c.

† Under "miners" are understood here only those actually engaged in the work of mining.

PERCENTAGE OF MINERS WORKING IN UPPER SILESIAN  
HARD-COAL MINES\*

Year	8 Hours and Less	More than 8 up to 10 Hours	More than 10 up to 12 Hours
1889	3·2	15·1	81·7
1890	10·2	34·5	55·3
1891	11·4	43·5	45·1
1892	10·5	45·7	43·8
1893	8·7	54·9	36·4
1894	9·1	56·4	34·5
1895	9·1	56·4	34·5
1896	9·1	58·8	32·1
1897	9·0	59·8	31·2
1898	9·1	59·3	31·6
1899	9·1	59·2	31·7
1900	9·7	59·3	31·0
1901	11·5	57·3	31·2
1902	10·3	58·1	31·6
1903	10·6	58·6	30·8
1904	10·4	60·4	29·2
1905†	14·5	75·2	10·3
1906	14·3	74·9	10·8
1907	17·6	74·0	8·4
1908	18·8	71·8	9·4
1909	19·6	70·5	9·9
1910	20·4	70·2	9·4
1911	19·7	70·6	9·7
1912	21·4	70·1	8·5
1913	22·0	69·7	8·3
1914	25·0	68·7	6·3

The development of the working day in the Upper Silesian mines is much more typical for the general development in Germany than that in the Ruhr mines. In the eighties, practically all workers in the Upper Silesian mines worked the 12-hour day, including their trip from pit-head to pit-head, while in the Ruhr they worked the 9-hour day. Thus, in Upper Silesia, the working day was one-third longer than in the Ruhr territory! An astounding difference in the two largest German mine fields. After the large scale strike in 1889, conditions improved in Upper Silesia, and during the nineties the majority of workers gained the 10-hour day. In 1904, for the first time, less than 30 per cent of the workers worked more than 10 hours. The sharp

\* Cf. *Zeitschrift für das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, statistics annually published.

change between 1904 and 1905 is a statistical one (see footnote\*). In the following years the shortening of the working day continued, and by 1914 only a small minority of the miners worked more than 10 hours, the majority had gained the 10-hour day and a substantial minority had won the same working day as the miners in the Ruhr territory.

Summarizing the situation in the beginning and at the end of the period, we may say that the shortening of the working day which took place in these years led to an extraordinary variety in the length of the working day, with 15 and more hours in the home industries and 6 hours for miners working in especially hot places, but also with differences of one-third and more in the length of the working day in the same industry; and differences up to a quarter within the same occupations under collective agreements. But while it was not difficult to find working days in 1914 of the same length as a hundred or seventy-five or fifty years before, in no period since the industrial revolution in Germany was the working day shorter for so many workers, or as short as in 1914.

\*                    \*                    \*

“So soon as that shortening (of the working day—J.K.) becomes compulsory, machinery becomes in the hands of capital the objective means, systematically employed for squeezing out more labour in a given time. This is effected in two ways: by increasing the speed of the machinery, and by giving the workman more machinery to tend. Improved construction of the machinery is necessary, partly because without it greater pressure cannot be put on the workman, and partly because the shortened hours of labour force the capitalist to exercise the strictest watch over the cost of production.”†

Thus Marx on the consequences of the shortened working day and on the new policy of exploitation in the second phase of industrial capitalism. Thus also the development in Germany during the period from 1870 to 1900.

Unfortunately we are not able to construct a general index of

\* From 1905 on statistics exclude the journey from and to the surface, except when it takes more than half an hour; if it does, the time over the half hour is added to the working day.

† *Capital*, Vol. I, Chapter 15.

productivity, showing the general increase of production per worker, or per worker and per hour. Only for the few census years are we able to give a very rough indication of the development of production per worker :

PRODUCTION PER WORKER, 1882 TO 1907\*

(1882 = 100)

Year	Employment	Production	Production per Worker
1882	100	100	100
1895	144	168	117
1907	207	292	141

Fortunately these few census years do not include a year of highest trade activity and one of deepest crisis; for in this case the figures would be useless because of certain fluctuations of productivity within the trade cycle. If we take into account the fact that, during the period under review, the working day has been shortened, it should not be surprising if, during the twenty-five years, production per worker and per hour increased by over 50 per cent—considerably more, I should say, than in the other big capitalist countries, more even than in the rapidly developing United States, to say nothing of Britain or France.

But these average figures for industry as a whole are composed of very different sets of figures for the individual industries, and even branches of the same industry. Although our statistical material is not of very high quality, and does not cover a great variety of industries, even our meagre collection is rich enough to illustrate this.†

PRODUCTIVITY PER WORKER IN COAL MINING

(1900 = 100)

Period	Hard-Coal Mining	Soft-Coal Mining
1868-1878	78	54
1879-1886	100	66
1887-1894	101	72
1894-1902	99	92
1903-1909	95	119
1909-1913	97	134

\* Based on the occupation figures for manufacturing, including craftsmen, building and mining of the population census and the production index of the Institut für Konjunkturforschung.

† Based on the official statistics as published in the *Statistisches Jahrbuch für das Deutsche Reich*, *Statistisches Handbuch für das Deutsche Reich*, Vol. I, and *Zeitschrift für das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, annually.

Productivity in soft-coal mining has more than doubled in the period under review, while production per worker in hard-coal mining seems to have increased rapidly up to the eighties, continuing the trend of the sixties, and then to have stopped in its upward movement.

Not much needs to be said about the increase of productivity in soft-coal mining, except that the increase in production was in fact still greater than the above table indicates. For instance, it does not take into account the decline in the length of the working day of the miner. But the development of productivity in hard-coal mining requires further investigation. Let us first give a comprehensive survey of the development during more than a century:

PRODUCTIVITY PER WORKER IN HARD-COAL MINING,  
1787-1913\*  
(1900 = 100)

<i>Period</i>	<i>Productivity</i>	<i>Period</i>	<i>Productivity</i>
1787-1796	44	1860-1867	65
1797-1806	50	1868-1878	78
1807-1816	43	1879-1886	100
1817-1826	44	1887-1894	101
1825-1832	45	1894-1902	99
1832-1843	46	1903-1909	95
1844-1852	45	1909-1913	97
1852-1859	49		

Apparently we have here to distinguish three phases in the history of productivity of the hard-coal miner. Between 1787 and 1860 no long range change of significance took place. Between 1860 and 1886 there was a quarter-century of rapid increase. Then between 1886 and 1913 we again have a quarter of a century without any material change. And yet such an analysis would be wrong as it would regard as equal two phases which are as different as they can be—namely, the phases: 1787 to 1860, and 1887 to 1913.

During the 1787 to 1860 phase the productivity per coal miner remained about equal, in a period of a considerable lengthening of the working day; that is, it declined per hour of work. During the other phase (1887 to 1913), productivity per coal miner remained about equal, in a period of a shortening

\* For sources for earlier figures (1787-1870), see the previous chapter.



of the working day. This is the first distinction. During the first period, productivity per miner per hour of work declined; during the second period, productivity per hour of work increased.

But this is not all. The above figures are computed per worker employed by the mines. Between 1887 and 1913 we have, however, some increase in the number of workers employed by the mine owners, yet doing work which has but little to do with actual mining. From the mines developed chemical plants. The products of the mines were partially used by the mining companies for the production of various other products derived from coal. How different the productivity per miner looks if we take these two factors into account, can be studied in the case of Upper Silesia for which we have some interesting data.\* Next to the Ruhr territory, Upper Silesia was the largest coal field in the period under review. The following data are not very accurate but sufficient to show the influence of the two factors mentioned above.

#### COAL PRODUCTION IN UPPER SILESIA PER MINER

Period	Production per Shift	(1900 = 100)		Hours of Work	Productivity
		Actual Underground Workers to Total Number of Employed			
1887-1894	94	101	106	87	
1894-1902	98	100	101	96	
1903-1909	87	95	98	93	
1909-1913	85	92	96	97	

If we compare the first and the last columns of this table we notice at once the great influence the two before-mentioned factors have on the development of productivity, how different is the actual development of productivity per worker actually mining coal as computed per hour of work and of productivity per worker employed by the coal mines as computed per shift. The first column shows a small increase between 1887-1894 and 1894-1902, the last a very considerable increase; the first one shows a considerable decline from the second to the third and fourth trade cycles, the last shows relative stability.

\* Based on the annual data given in the *Zeitschrift für das Berg-, Huetten- und Salinenwesen im Preussischen Staate*,

We know from the above data on hours of work that in the Ruhr territory, for instance, the decline in the number of hours worked per shift was not very considerable during the period under review. But we find that the change in the relation of underground workers to all miners was, during the last few years under review, even more outstanding in the Ruhr than in Upper Silesia. Therefore productivity in coal mines, if computed per hour and per actual coal miner, increased during the period under review. But there is no doubt that in the twentieth century this increase was smaller than in the last forty years of the nineteenth century. Again we find that the hard-coal mining industry in Germany was especially sensitive to changes in the general capitalist methods of production and exploitation: the tendencies of stagnation and decay, the effects of stable or declining wages, of immobility in the length of the working day (to be observed in Germany, France and Britain after 1919), the tendency for technical progress to stagnate, the tendency to increase the intensity of work without getting many more products out of the worker because of his physical over-exertion—all this became obvious in Germany in the hard-coal industry during the first years of the twentieth century—and this is not surprising if we remember that the coal industry was the first large industry to be thoroughly monopolized already in the early nineties.

But the hard-coal industry is, of course, exceptional in the degree in which appear the features of decay inherent in monopoly capitalism. The figures for industry in general, and for soft-coal mining, and the following data on the pig iron industry demonstrate this.

PRODUCTIVITY PER WORKER IN PIG IRON PRODUCTION\*  
(1900 = 100)

Period	Productivity	Period	Productivity
1837-1843	9	1879-1886	60
1844-1852	8	1887-1894	80
1852-1859	11	1894-1902	97
1860-1867	19	1903-1909	117
1868-1878	35	1909-1911†	130

\* For early years see the previous chapter. For the years since 1870 see *Statistisches Handbuch für das Deutsche Reich*, Vol. I, and *Statistisches Jahrbuch für das Deutsche Reich*, annually.

† Only a few years of trade cycle.

The increase in productivity is truly enormous—and that up to the last years under review! We are not bothered at all by the fact that we have no accurate data on the number of hours worked per day—as it is not essential to our understanding to know whether production actually increased, say, during the last fifty years under review by 100 or 200 or 500 per cent; the increase itself was so gigantic that it suffices completely to show the trend of events.

\* \* \*

The very great increase in the productivity per worker which took place between 1860 and 1910 is the result of improved machinery and organization of the working process, and of increased intensity of work. While the first two factors represent definite progress, the third is one of the main items adversely affecting the standard of working and living of the workers. Real wages increased during the major portion of the period reviewed. Hours of work declined during the whole period under review. If, however, we relate these two facts to the increase in the intensity of work, we must not only regard them merely as pleasant counter-balancing factors but as the basis upon which the intensity of work was increased.

Without a shortening of the working day and more food for the increasingly exhausted workers, the intensity of work could not have been increased. Capitalism did not make an amicable gift of the shorter working day and improved real wages. But, rather in order to increase the rate of profit and to diminish the contradiction between the specific forms of early capitalist production and the productive forces, the capitalists were compelled to change their methods of exploitation, to concentrate on increasing intensity of work. This they could do only on the basis of a shorter working day and increased real wages. Even so, they made every effort to keep the working day as long as possible and the rise of real wages as small as possible. That real wages were increased to the extent shown, and the working day was shortened to the extent given, was due to the pressure of an increasingly well organized labour movement.

But what proof have we for the fact that the intensity of work actually increased? We have no statistics of the development of

the intensity of work. We know, on the other hand, that this increase was a common experience during these years. But it would be much better if we had more tangible evidence than expressions by individual workers, especially as it is difficult to remember the intensity of work five or ten or twenty years ago even for a worker who has experienced the effects of these production methods.

There are two auxiliary sources enabling us to check up on the increase in the intensity of work, namely, accident and health statistics. The former we have used also in our studies on conditions in the United States and in Britain; they are a fairly reliable indirect gauge, though, unfortunately, they usually refer only to coal mining. Health conditions, of course, are also influenced by other factors than the intensity of work, even if the latter is probably one of the main influences upon changes in the health of the adult worker, although the influence of housing conditions cannot be under-estimated. Statistics for both accidents and health are somewhat more accurate and comprehensive for Germany, during the period under review, than for other countries, because of the advance of German social insurance at that time.

In the following section we shall study accidents and health, partly because they are auxiliary indicators of the increased intensity of work, partly because in themselves they are of the greatest importance in studying the standard of living and working of the German workers.

#### 4. ACCIDENTS, HEALTH AND UNEMPLOYMENT

Because of her relatively considerable progress in social insurance legislation before 1914, Germany is one of the few countries of which we can make a more general study of accidents in industry as a whole, for at least part of the period under review.

But for reasons which will soon become obvious, it is desirable first to study conditions in the coal industry and in mining in general for which we have figures covering the whole period under review. For mining, as for industry as a whole, we must, for reasons of statistical reliability, confine our study to fatal

accidents. Our figures for industry as a whole refer to the number of employed workers only, not taking into account changes in the number of hours worked per week; therefore, the best kind of accident figures, referring to the number of hours the individual worker is exposed to the dangers of accidents, cannot be computed.

The following table shows the fatal accident rate among the miners of Prussia during the period under review:

### FATAL ACCIDENT RATE AMONG PRUSSIAN MINERS,

1870 TO 1914

(Per 1,000 Miners)\*

Year	Accident Rate		Year	Accident Rate		Year	Accident Rate	
	Hard-Coal	All Miners		Hard-Coal	All Miners		Hard-Coal	All Miners
1870	3.15	2.56	1885	3.58	2.87	1900	2.25	2.08
1871	3.08	2.63	1886	2.55	2.25	1901	2.34	2.22
1872	2.74	2.48	1887	2.68	2.30	1902	1.99	1.86
1873	2.82	2.50	1888	2.73	2.33	1903	1.92	1.80
1874	2.99	2.43	1889	2.59	2.25	1904	1.80	1.71
1875	2.83	2.45				1905	1.86	1.74
1876	2.82	2.49	1890	2.64	2.25	1906	1.97	1.84
1877	2.76	2.31	1891	2.89	2.40	1907	2.40	2.25
1878	2.74	2.34	1892	2.21	1.96	1908	2.71	2.42
1879	2.97	2.44	1893	2.62	2.25	1909	2.04	1.88
			1894	2.21	1.98			
1880	3.22	2.60	1895	2.54	2.23	1910	1.98	1.86
1881	3.11	2.61	1896	2.58	2.24	1911	2.01	1.93
1882	3.41	2.72	1897	2.35	2.12	1912	2.54	2.39
1883	3.27	2.63	1898	2.86	2.49	1913	2.48	2.31
1884	2.97	2.45	1899	2.31	2.11	1914	2.40	2.32

If we compress these figures into trade-cycle averages and compare them with the figures for earlier periods in the history of Prussian coal and general mining (including ore mining, etc.), we get the following picture of the development of the fatal accident rate in Prussia:

### FATAL ACCIDENT RATE IN PRUSSIAN MINING

(Per 1,000 Miners)

Period	Hard-Coal Mining	Total Mining
1821-1840	2.35†	—
1841-1850	—	1.68
1851-1860	2.04‡	1.77

\* Cf. *Zeitschrift für das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, annually published statistics.

† Including soft-coal mining.

‡ 1852-1860 only.



FATAL ACCIDENT RATE IN PRUSSIAN MINING—*continued**(Per 1,000 Miners)*

<i>Period</i>	<i>Hard-Coal Mining</i>	<i>Total Mining</i>
1861-1870	2·82	2·27
1868-1878	2·94	2·47
1879-1886	3·13	2·56
1887-1894	2·56	2·22
1894-1902	2·38	2·15
1903-1909	2·10	1·95
1909-1914	2·24	2·12

This table is of very great interest for various reasons. Firstly, it gives a unique survey of the development of accidents over a very long period. Secondly—if rightly interpreted by taking into account a number of important developments—it illustrates important structural and other changes.

Let us look first at the general development. In hard-coal mining—if we take into account the fact that the earliest figures include soft-coal mining, at that time more dangerous—the fatal accident rate was about the same between 1909 and 1914 as between 1821 and 1840. Almost a hundred years have brought about no material change in the fatal accident rate per employed coal miner. The difference between conditions in the early nineteenth and the early twentieth century is striking indeed if we take into account the fact that the working day has been shortened by one-quarter to one-third during nearly a century,\* and that the composition of mining labour has changed; for the new figures refer to a mining force with a proportionally larger number of workers not engaged in the highly dangerous tasks of mining but in other work. Coal mining accidents per hour of work per actual miner in 1909-1914 were much higher than in 1821-1840—and this in spite of an undoubted and very considerable improvement in safety measures which had been extremely primitive a hundred years earlier.

Just before the period of intensive exploitation set in, mining accidents seem to have reached a relatively low level as compared with the preceding decades; but the figures are not accurate enough to lead to a definite conclusion. However, they are accurate enough to show the rapid and enormous increase when the period of intensive exploitation set in. All through

\* More so if compared with 1840 and less if compared with 1821.

the sixties, seventies and the early eighties, accidents were high, as compared with former times, and on the increase. In fact, during the trade cycle 1879-1886 they reached a height unsurpassed during any trade cycle or similar period in the whole of the nineteenth century. During the following trade cycles, accidents showed a decline. And this decline is the reason why the study of general accident statistics—which, for lack of figures, can begin only with the cycle 1887-1894—had to be preceded by a special study of coal mining accidents, for which we have earlier figures. The official general accident statistics begin precisely at a moment when the accident rate seems to have reached record heights. In fact, the rate of accidents caused by the rapid intensification of the working process had become a danger to the industrial production process. It is, therefore, not surprising that accident insurance was introduced at this time.

From 1879-1886 to the trade cycle covering the years 1903-1909 the fatal accident rate declined. During the last pre-war trade cycle, 1909-1914, accidents increased again. The trade cycle from 1903-1909 showed the lowest accident rate since half a century, although it probably did not reach the low level of the fifties of the nineteenth century.

The decline which we observe since 1887-1894 was, however, probably largely an apparent one only. If we take into account the relative decline of the number of underground workers, and if we add to this the fact that the working day had been shortened, we come to the conclusion that the fatal accident rate per underground miner per hour of exposure (and work) has probably changed relatively little.

But if the fatal accident rate in mining changed but little during the period under review—does that not show that the intensity of work in mining probably remained about the same?

On the contrary! For we must realize that during the third of the century preceding 1914 accident-prevention measures were introduced upon a large scale. And we must remember that, if the intensity of work had not been increased, the shortening of the working day should have led to a marked decline of accidents per hour because of decreasing fatigue. If under such conditions the accident rate declined only a little, this is surely

an indication that the intensity of work must have appreciably increased.

For industry as a whole, fatal accidents show the following development:

FATAL ACCIDENT IN RATE IN INDUSTRY, 1887 TO 1914\*

		(Per 1,000 Insured)			
<i>Year and Period</i>	<i>Rate</i>	<i>Year and Period</i>	<i>Rate</i>	<i>Year and Period</i>	<i>Rate</i>
1887	0.77	1896	0.71	1906	0.63
1888	0.68	1897	0.70	1907	0.68
1889	0.71	1898	0.73	1908	0.67
1890	0.72	1899	0.72	1909	0.62
1891	0.71	1900	0.74	1903-1909	0.64
1892	0.65	1901	0.72		
1893	0.69	1902	0.64	1909	0.62
1894	0.65	1894-1902	0.70	1910	0.56
1887-1894	0.70			1911	0.59
		1903	0.63	1912	0.65
1894	0.65	1904	0.63	1913	0.62
1895	0.67	1905	0.63	1914	0.63
				1909-1914	0.61

Between the end of the eighties and the beginning of the new century the fatal accident rate per worker remained the same. That is, if we take into account the fact that the average working time per week declined, we find that the accident rate per hour worked increased. If we also keep in mind that accident prevention measures were introduced on a considerably enlarged scale during this period, and that a shortening of the working time in itself tends to lead to an improvement in the accident rate because of less fatigue, then the above figures can be taken as the strongest possible indication that the intensity of work was increased considerably in the closing decades of the nineteenth century. Entering the twentieth century, conditions improved somewhat. The accident rate declined by almost 10 per cent from the last trade cycle in the nineteenth to the first in the twentieth century, and continued to decline during the second cycle. Does this indicate a genuine decline in the intensity of work? Again we must point to the fact that these figures indicate only the accident rate per worker and not per hour worked. Now, during the twentieth century there was an

\* *Statistisches Handbuch für das Deutsche Reich*, Vol. I, and *Statistisches Jahrbuch für das Deutsche Reich*, annually.

especially rapid shortening of the working day, for the following reasons: the working day was shortened for all factory workers (no home workers are covered by the above accident statistics) whether they were organized or not; and it was shortened even more for those who became organized. And it was precisely during the first years of the twentieth century that the organization of the workers made particular progress. The number of organized workers in the Free Trade Unions rose from 278,000 to 678,000 in 1891 to 1901—but from 1901 to 1911 it rose from 678,000 to 2,340,000 workers. The number of organized industrial workers in all trade unions amounted to about 5 per cent of all industrial workers in the beginning of the nineties; by 1913 the percentage was roughly one-third. A decline in the number of hours worked among all factory workers of  $1\frac{1}{2}$  hours per day between 1894–1902 and 1909–1914 would have more than compensated for the decline in the accident rate, and, as at the same time accident prevention measures were improved and were applied more extensively, the above figures for the twentieth century not only make a further increase in the intensity of work not improbable, but actually support such an assumption. As we shall see later, this is further supported by the official health statistics.

In summing up we may say that general accident statistics show a marked increase per hour of exposure—in spite of improved preventive measures—up to the end of the nineteenth century. The figures for the twentieth century up to 1914 indicate a further though much less pronounced increase. In mining, the accident rate, in spite of a seemingly considerable but probably really small decline from the end of the eighties to the first decade of the twentieth century, was still much higher than in the first half of the nineteenth century. Safety measures introduced during the last quarter of the century (1887–1914) could not counter-balance the effects of increased intensity of work. All data at our disposal indicate for the workers in general a definite deterioration for the first two-thirds of the period under review—1870–1900; and a further, though slighter, deterioration in the years 1900–1914. They also indicate a further increase in the intensity of work, as even a possible small improvement in the accident rate in some industries was

too insignificant as measured by the effects to be expected from a shortening of the working day and the further spread of accident preventive measures to allow the assumption of conditions of stable intensity of work even in selected industries.

\* \* \*

While German accident statistics—though poor enough—are very good as compared with those for other countries in the period under review, German health statistics—though even poorer than the accident statistics—are unique as compared with other countries. This is the result, of course, of the early introduction of health insurance. Through the statistics of the health insurance scheme, we get an approximate picture of health conditions since 1888.

The following table presents the number of cases of illness and the duration of the illness per insured member. Even in 1888 the number of insured was higher than 5 million; it passed the 10 million mark in 1903 and was over 15 million in 1914.\*

#### HEALTH CONDITIONS IN GERMANY, 1888 TO 1914

Year	Illnesses Per Member	Sick Days	Year	Illnesses Per Member	Sick Days
1888	0.33	5.47	1901	0.38	6.91
1889	0.33	5.44	1902	0.36	6.83
1890	0.37	5.95	1903	0.37	7.02
1891	0.35	5.93	1904	0.39	7.77
1892	0.36	6.15	1905	0.40	7.88
1893	0.39	6.50	1906	0.38	7.48
1894	0.34	6.00	1907	0.41	8.00
1895	0.36	6.18	1908	0.42	8.43
1896	0.35	5.99	1909	0.40	8.26
1897	0.36	6.18	1910	0.40	8.01
1898	0.34	6.07	1911	0.42	8.45
1899	0.38	6.60	1912	0.43	8.49
1900	0.39	6.82	1913	0.42	8.66

From these statistics it is obvious that health conditions among the German workers deteriorated during the whole period under review. If we compress the above figures into trade-cycle averages, we get the following survey:

\* See *Statistisches Handbuch für das Deutsche Reich* and *Statistisches Jahrbuch für das Deutsche Reich*, annually.



## HEALTH CONDITIONS, 1888 TO 1913

<i>Period</i>	<i>Illnesses Per Member</i>	<i>Sick Days</i>
1888-1894	0.35	5.92
1894-1902	0.36	6.40
1903-1909	0.40	7.83
1909-1913	0.42	8.40

From trade cycle to trade cycle the number and deterioration of illnesses per member increased, especially the latter. Now, part of this increase may, perhaps, be due to a better working of the insurance scheme, because of growing pressure by the working class. But this cannot explain the whole of the increase.

But why should health conditions deteriorate, especially up to 1900? We know that during the last decades of the nineteenth century real wages in Germany increased. The worker could eat more and better food than formerly. We also know that during the whole period under review the number of leisure hours per worker increased considerably. If the worker worked 12 hours in 1885 and 11 hours in 1900 this meant that his leisure hours could increase by one-quarter (assuming three hours of leisure in 1885) and he could sleep a quarter of an hour longer. One would therefore expect a rapid improvement in health conditions instead of the deterioration which the above figures show. There is really only one chief explanation, though there are also subsidiary ones. The chief cause of the deterioration of health was the increase in the intensity of work. Among the additional causes were a further deterioration of housing conditions, a slightly increased strain put upon the worker by the fact that distances to and from work increased with the growth of the city, that congestion in transport gave greater opportunity for infection, and the growth of dangerous industries against which, however, we have to put improved protective measures, as well as the sanitary measures generally adopted in the big factories.

\* \* \*

There was an increase in the general accident rate per hour of exposure. There was a pronounced deterioration in general health conditions. How did unemployment develop? Was there an increase in security of work? For the preceding decades there are no satisfactory unemployment statistics. For the years

from 1870 to 1914, we have data for part of the period, beginning in 1887. I have made a number of estimates for the years from 1887 to 1902, on the basis of the official labour market and of the membership reports of health and accident insurance; for the years from 1903 to 1914 I used the unemployment statistics of the German trade unions.\* The figures refer almost exclusively to non-agricultural workers. We are, therefore, justified in our heading for the following table:

PERCENTAGE OF UNEMPLOYMENT AMONG INDUSTRIAL WORKERS IN GERMANY, 1887 TO 1914

Year	Percentage	Year	Percentage	Year	Percentage	Year	Percentage
1887	0.2	1894	3.1	1901	6.7	1909	2.8
1888	3.8	1895	2.8	1902	2.9		
1889	0.2	1896	0.6	1903	2.7	1910	1.9
		1897	1.2	1904	2.1	1911	1.9
1890	2.3	1898	0.4	1905	1.6	1912	2.0
1891	3.9	1899	1.2	1906	1.2	1913	2.9
1892	6.3			1907	1.6	1914†	3.2
1893	2.8	1900	2.0	1908	2.9		

The figures show extraordinary fluctuations. In some years we observe an astonishing scarcity of labour; in others unemployment rises to considerable heights. In fact, the fluctuations amount to several thousand per cent—from practically nothing to almost 7 per cent. If we compress the figures into trade-cycle averages we get the following result:

UNEMPLOYMENT BY TRADE CYCLES

Period	Percentage
1887-1894	2.8
1894-1902	2.3
1903-1909	2.1
1909-1914	2.5

Our figures are much too rough to imply more than that unemployment averages over a whole trade cycle at between 2 and 3 per cent. If we study the figures for individual years we get the impression that the absolute scarcity of labour which we sometimes find in the eighties and nineties had not returned during the twentieth century; this is the only indication, and a very weak one, of what was to follow later in the twentieth century; labour scarcity had already disappeared before the war of 1914—but widespread unemployment during years of relatively high trade activity had not yet come in; conditions

\* Cf. *Statistisches Jahrbuch für das Deutsche Reich*, annually. † First half-year.

between 1900 and 1914 were in a transitory state. But can one say from this that security of work had declined? I think one is justified in noting that the almost absolute security of work which the worker enjoyed during some of the years of the nineteenth century had disappeared.

A further point must be mentioned. During the period from 1870 to 1914 the percentage of agricultural workers with a relatively permanent high security of work among the total number of workers considerably declined. That is, an increasing proportion of workers were affected by insecurity of work. Furthermore, the process of proletarianization—the throwing of small businessmen, shopowners and handicraftsmen on to the labour market (a process which began in the early history of capitalism)—continued unabatedly, and the percentage of the population exposed to insecurity of work rose considerably. If one could compute figures for the percentage of unemployment among the people as a whole and not only among the workers, the above table would look very different, as the number of industrial workers increased during the years from 1887 to 1914 by over 100 per cent, while the population grew by less than 50 per cent.

\*                    \*                    \*

Let us now summarize the development of accident, health and unemployment conditions in relation to the development of real wages and hours of work:

<i>Element of Labour Conditions</i>	<i>Period from 1870 to 1900</i>	<i>Period from 1900 to 1914</i>
Real Wages .. ..	Increasing	About stable
Working Day .. ..	Becoming shorter	Becoming shorter
Accidents (per hour of exposure)—		
Generally .. ..	Rise from end of eighties	Small rise probable; at best stability
Mining .. ..	Rising to middle of eighties; at best small decline from end of eighties	Stable, with tendency to rise
Health—		
Generally .. ..	Deteriorating from end of eighties*	Deteriorating
Unemployment ..	Probably no deterioration since 1887	Deteriorating (labour scarcity has ceased)

\* No earlier data.

This brief survey of some factors of importance for the shaping of labour conditions is not uninteresting and facilitates the evaluation of the general development of labour conditions. There is not the slightest doubt, for instance, especially if we take into account the increase in the intensity of work, that the new century brought with it a deterioration in labour conditions. The only factor which really developed favourably for the worker was the shortening of the working day. And that is definitely insufficient to lift the standard above the pre-1900 level.

Somewhat more difficult is the evaluation of conditions during the last thirty years of the nineteenth century. We have a definite rise in wages and a definite shortening of the working day. At first accidents probably rose rapidly and later considerably less. Health conditions deteriorated since the end of the eighties. Unemployment had spread, but did not increase in intensity among industrial workers. At the same time the intensity of work increased rapidly. But while it is easy to see that workers' conditions deteriorated absolutely in the early period of monopoly capitalism—that is, from 1900 to 1914—it seems doubtful whether they did so during the years from 1870 to 1900. Before coming to a final conclusion we must study two further factors which are of the very greatest interest in our study of labour conditions, two factors of which the importance of one is usually under-estimated while that of the other is just as often exaggerated. I refer to housing and social insurance.

## 5. HOUSING AND SOCIAL INSURANCE

We have already studied housing conditions when German capitalism was young, and we have seen how the small houses, characteristic of the German cities of that time, were overcrowded and constructed of very poor material.

How did housing conditions develop during the second half of the nineteenth century, and especially during the last thirty years? They grew from bad to worse, becoming so terrible that they not only caused concern among the bourgeois humanitarians but also aroused the authorities. Academic students of economic problems took the matter up and some people influential in the labour movement made housing a major plank

in their social reform programme. Writing in 1872 in the *Volksstaat*, Leipzig, Engels describes the housing problem as follows:\*

“What is meant to-day by housing shortage is the peculiar intensification of the bad housing conditions of the workers as the result of the sudden rush of population to the big towns; a colossal increase in rents, a still further aggravation of overcrowding in the individual houses, and, for some, the impossibility of finding a place to live in at all. And this housing shortage gets talked about so much only because it does not limit itself to the working class but has affected the petty bourgeoisie also.”

But if Engels speaks of the “sudden rush of population to the big towns” in 1872, how would he have defined what happened after 1872 when the population of the German towns grew even more rapidly! This was the time when the urban population of Germany grew from little more than one-third of the whole in 1871 to more than one-half in 1900, chiefly through the growth of the big cities.

The consequence of this intensified influx was not only severely increased congestion, and a rapid worsening of housing conditions in general, but the appearance of a new method of housing the workers in huge tenements. The improvements in the water system of the towns now made it feasible to build houses many storeys high, which was impossible when the tenants were obliged to go to pumps in the street to get their water.†

In a statement on the absolute deterioration of the conditions of the working class Lenin wrote as follows:‡

“The worker is impoverished absolutely, i.e. grows actually poorer than before, is compelled to live worse, eat more sparingly, remain underfed, seek shelter in cellars and attics.”

Seek shelter in cellars and attics—this is one of the important

\* *The Housing Question*, Part One.

† The introduction of running water is one of many examples which show how an improvement in technique may lead to a deterioration of living conditions.

‡ *Destitution in Capitalist Society*, Collected Works, Vol. XVI, p. 212, Russian edition.



changes in the development of housing conditions up to the present century. Large stone houses, with cellars and numerous small rooms high up in the building, became characteristic of working class housing. While it is obvious that living in cellars which are dark and damp, is a bad thing, it is not at once clear why living so high up should denote a decline in the standard of housing. Do not American millionaires pay enormous rents to live in roof pent-houses? But in Germany the situation is very different from that in the United States: the higher the storey the smaller and more dingy the rooms. It was common in Germany to find a respectable civil servant living on the first floor, perhaps a comfortable shopkeeper on the second, a skilled worker on the third, until on the top floor we find an unskilled workers' family with one spare bed for two lodgers, one sleeping at night and the other during the day.

But before we further investigate working class housing conditions, it will be useful to have a look at the comparative development of wages and rent:

#### RENT AND WAGES, 1868 TO 1914

(1900 = 100)

<i>Period</i>	<i>Rent*</i>	<i>Wages†</i>
1868-1878	71	75
1879-1886	84	79
1887-1894	89	88
1894-1902	96	95
1903-1909	113	108
1909-1914	126	121

We know that wages increased during the last thirty years of the nineteenth century more than did the cost of living; we also know that during the first fourteen years of the twentieth century real wages remained fairly stable, that prices and wages moved abreast.

But the above table shows that rent increased more than wages. This means that the increased purchasing power of the worker—which the rise in real wages indicated for the years 1870-1900—could not only not be distributed evenly over all important items; but if the worker wished to maintain his standard of housing, at least as far as the floor space per person

\* For methods of construction see Appendix to this Chapter.

† Up to 1887 gross, and then net, wages.

was concerned, he would have to cut down on the increased food budget. During the period, 1868–1886, it is very probable that there was an increase in food consumption—necessitated by the increased intensity of work and facilitated by higher wages—and a serious decline in the standard of housing.

But the increase in rents, while important, was not the decisive factor in the deterioration of housing conditions. Of greater importance was the state of the dwellings which deteriorated rapidly between 1870 and 1900; although from 1900 on, slight improvements began to be made.\*

One of the worst features of the new four and five storey stone buildings, containing a great number of small working class apartments, and built around a dark and dusty court-yard, is that almost no sunshine or daylight can enter those flats which are at the back of the house, where the poorest tenants live. The number of so-called rear-flats, with no windows to the street, increased in Berlin from 28 per cent in 1861 to 48 per cent in 1910; in Magdeburg it was, in 1910, 33 per cent; which shows that not only the big towns were suffering from this deprivation, so harmful, especially for the children. If we take small flats, the proportion is still more unfavourable. Of 100 flats with no more than two inhabitable† rooms, 70 were rear-flats in 1910 in Berlin, and over 60 in Magdeburg; that is, almost the whole working class in Berlin lived in flats to which sun and light had only very restricted access.

In these dark flats there were often more than two persons per room. If we regard an apartment as overcrowded that houses more than two persons per habitable room, including the kitchen, the percentage of persons living in small, overcrowded flats was as follows in 1910, although conditions had already somewhat improved as compared with 1900, but were still considerably worse than in 1870:

Posen	53	Breslau	33
Dortmund	41	Munich	29
Düsseldorf	38	Cologne	27
Aachen	37	Berlin	22
Essen	37		

\* The figures in the following pages are taken from R. Kuczynski, *Post-War Labor Conditions in Germany*, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin No. 380.

† Including kitchen.

The improvement in housing during the twentieth century—that is up to 1914—which did not raise conditions to the 1885 level, for instance, was due partly to a decline in the number of children per working-class family and to a decline in the number of “night-lodgers”—lodgers with a right to their bed but no right to stay in the room during the day.

The standard of sanitation was still very low in 1910, in spite of improvement during the preceding decade. The percentage of dwellings with their own separate water closets was in 1910 as follows:

65 in Breslau	47 in Berlin
65 in Kiel	46 in Essen
61 in Halle	44 in Cologne
59 in Posen	43 in Hanover
59 in Stettin	38 in Strassburg

If we look only at the small dwellings, inhabited by the workers, the percentage goes down rapidly:

In Breslau from 65 to 15	In Stettin from 59 to 20
In Halle from 61 to 17	In Berlin from 47 to 42
In Posen from 59 to 20	In Cologne from 44 to 33

To all this must be added a serious shortage of dwellings which made it impossible for some families to set up a household of their own.

If we survey the development of housing during the whole period under review we are again struck by the variety of changing factors which influenced the conditions of the workers. In the twentieth century (1900–1914) the development of real wages took an unfavourable turn, hours of work continued to be favourable, health conditions remained unfavourable, accidents are less unfavourable, and housing conditions improved somewhat, while all through the two periods the intensity of work increased.

And all through—from 1870 to 1914—the conditions of work deteriorated, although the progress of deterioration fluctuated from trade cycle to trade cycle and was sometimes only slight—when the profits of capital were buttressed up by extra-profits from foreign investments. This holds true even if we take into account the last factor which we shall study here, the development of factory legislation and social insurance.

## 6. FACTORY LEGISLATION AND SOCIAL INSURANCE

Prussia had been, on the whole, ahead of the German states in factory legislation—although it must be remembered that Prussia was far behind Great Britain, for instance, and that it was easy to be ahead of the other German states which had introduced very little and very ineffective factory legislation.

In 1869 Prussian legislation was to be introduced into all the states of the North German Federation. With the unification of the Reich a considerable part of the factory legislation was unified too.

Sunday labour, the truck system, regular payment of wages, and so on, were regulated by the law of 1869 and the additional laws of 1878, 1891 and 1897 providing for conditions not different from those in Britain, for instance. They established the basis for the whole of Germany, of the 6-day week and the payment of wages in money and at regular intervals. Child labour was abolished in factories and mines, by the law of 1878; juveniles from 12 (1878) and 13 (1891) years on were allowed to work only after having completed their schooling. The working day for children was shortened to six hours for those below the age of 14, and to 10 for those between 14 and 16 (1878). The law of 1896 brought further slight improvements.

Legislation for the protection of women was introduced in 1891, restricting the working day to 11 hours, forbidding underground work for women in mines and forbidding them to work for four weeks after confinement.\* During the twentieth century a number of small improvements were made, none of great importance, but all the result of resolute fighting by organized labour against the worst features of the capitalist system. During all this time agriculture and home industry were practically "safe" from legislative interference, and conditions for men, women and children continued to be incredibly bad. Children had to work 10 and 12 hours in home industries and women were worked the same hours as men in agriculture. Since 1878 a general factory inspectorate was introduced in all German states, with the exception of Luebeck, which followed suit in

\* The law of 1878 had already provided a three week period of rest (the first and only measure of protection for women introduced before 1891).

1886, Strelitz and the states of Lippe. The law of 1891 enlarged the factory inspectors' field of activity; they were given the right to act in the same way as the local police with entrance to any factory and factory department at any time; they were obliged to publish annual reports which were submitted to the Federal Council and the Reichstag. The number of factory inspectors grew rapidly from

3 in 1853, to  
46 in 1880, to  
80 in 1890, to  
300 in 1900

But it was not in the field of factory legislation that Germany was pre-eminent in the period under review; on the contrary, she was behind Great Britain in respect of legislation as well as its enforcement—although no country can boast at that time of such frank regular reports on conditions in its factories as Germany with her annual reports of the factory and mine inspectorate.

The field in which Germany made the greatest progress of any major capitalist country was that of workers' insurance—although in this she was behind Australia, for instance.

The chief fields of social insurance in Germany before 1914 were insurance against accident, illness, disablement, and for old age.

The chief legislation during the nineteenth century consisted of:

Insurance against the effects of illness: law of June 15, 1883; improved by the laws of April 10, 1892, June 6, 1900, and May 25, 1903.\*

Insurance against accidents: law of July 6, 1884; followed by improvements through the laws of May 28, 1885, May 5, 1886, July 11 and 13, 1887, and June 30, 1900.\*

Insurance against invalidity and for old age: law of June 22, 1889; followed by that of July 13, 1889.\*

Insurance for salaried employees: law of December 20, 1911.

These laws were introduced at a time which was significant

\* Codified in the general *Reichsversicherungsordnung* of July 19, 1911, which also brought some further improvements.



for two sets of facts: first, the number of accidents had increased rapidly, health conditions had probably considerably deteriorated and with the rapid increase of the proletarianization of the people and the shift from agriculture to industry the fate of the old people deteriorated rapidly; and secondly, the suppression of the Social-Democratic Party. We can regard the introduction of social legislation in Germany partly as the result of a rapid deterioration of the conditions with which it was concerned, and partly as an attempt by the ruling class to appear as the friend of labour while it suppressed its political organizations.

The wide scope of the system, and its rapid development can be gauged from the following membership figures:\*

#### MEMBERS OF THE OFFICIAL SOCIAL INSURANCE

Year	Against Accidents (Accident Insurance)	Against Sickness (Health Insurance)	For Old Age and against Invalidity (Invalidity Insurance)
1890	13,680,284†	6,579,539	—
1895	18,389,468†	7,525,524	11,813,259
1900	18,892,891†	9,520,763	—
1905	18,743,000	11,903,794	13,948,200
1910	24,154,000	13,954,973	15,659,700
1913	25,800,000	14,555,669	16,323,800

Practically every German worker was insured against accidents at the end of the period under review. In the beginning only workers in industry were insured, but agriculture and forestry workers followed within a few years. The number of people covered by the health insurance system is only about half as great as those insured against accidents, while those insured against invalidity and old age are between the other two, but nearer to the health insurance figure.

The significance and importance of the German social insurance system can be gauged from the following figures referring to 1900 and showing the number of persons benefiting from the system:‡

\* *Statistisches Handbuch für das Deutsche Reich* and *Statistisches Jahrbuch für das Deutsche Reich*.

† These figures are somewhat too high as they contain a number of people twice insured.

‡ *Statistisches Handbuch für das Deutsche Reich* and *Statistisches Jahrbuch für das Deutsche Reich*.

PEOPLE BENEFITING FROM SOCIAL INSURANCE IN 1900

Health Insurance	..	..	..	4,023,421*
Accident Insurance	..	..	..	594,889
Invalidity Insurance†	..	..	..	862,218
				<hr/>
Total Actual Beneficiaries	..	..	..	5,480,528

Accident insurance was all paid by the employers; health insurance, the insured paid about 70 and the employers 30 per cent of contributions; while invalidity insurance contributions were one-half by each side. Altogether, the workers paid in all three schemes somewhat less than half of the contributions, the employers about half, and the rest was made up from a contribution of the Reich to the invalidity insurance funds. Total contributions were:‡

1887	98,559,200 marks
1900	485,654,650 marks
1913	1,158,106,500 marks

Expenses were lower than revenue. The cost of administration declined from about 10 per cent of total expenses in 1887 to about 9 per cent in 1900. The funds of the three social insurance institutions rose not inconsiderably during the period under review. The five hundred million mark was passed in 1894; five years later funds had swollen to over one thousand million marks; in 1913 the funds just passed three thousand million marks. The structure of the system was financially sound, the amount of money spent had reached the first thousand million in 1893; in 1904 the five thousand million mark had been reached; in 1912 more than ten thousand million marks had been spent.

There is not the slightest doubt that the introduction of the system of social insurance improved the conditions of the sick, injured or aged workers. We have seen that about half of this improvement is due to the contributions from the workers themselves. The number of workers affected by accidents and sickness was greater after than before the introduction of the social insurance

\* Number of cases—not number of persons during year.

† Old Age, invalidity pensions, etc.

‡ Of which sums are to be deducted as interest on the capital of the insurance institutions: 4·1 million marks in 1887; 51·6 in 1900 and 127·9 in 1913.

system; and those workers who in former times were not affected by these evils and were able to work, were better off than those who later received social insurance benefits. And this point must be kept in mind: the social insurance system was a palliative for evils which were affecting an increasing number of workers. Only if we realize this can we properly evaluate the social insurance system in a capitalist country. There are various ways to look at this.

First, such a system is infinitely better than no system at all.

Second, such a system is only a palliative for growing evils.

Thirdly, such a system under capitalism does not properly alleviate completely the evils against which it is supposed to protect the worker.

For these reasons it is important to realize that, while the significance of the progress in social legislation in Germany as compared with other countries before 1914 must be fully recognized, the extent of the advantages the worker obtained was not as great as might at first glance seem apparent.

## APPENDIX TO CHAPTER III

### I. WAGE DATA AND THEIR SOURCES

When I first published an index of wages in Germany for the years 1820-1914 I was unable at that time to include all the wages statistics on which the index was based. Fortunately, Dr. I. Lubin, Commissioner of the U.S. Bureau of Labor Statistics, declared his willingness to print this considerable collection of figures.

However, it proved impossible to publish the figures within the time I thought necessary. As, on the one hand, I had published the index without enabling the reader to check up on the material on which it was based (and this is an awkward position for any scientist), and as, on the other hand, the Bureau of Labor Statistics had so many more important things to

publish than this agglomeration of German historical wages data, I made use of the opportunity to publish these figures in a small edition with a Latvian publishing firm.

The edition was a small one, written in German, and sold only a few copies in the countries which are free to-day. The remaining copies were, of course, destroyed by the German Fascists when they occupied the country. I am therefore reprinting this material in this volume with some additional data which I have collected in the meantime, especially for the mining industry.

The collection of wage data has been a woefully neglected feature of social science in all countries, and in few more so than Germany. In Great Britain there are at least two men—although without successors—who have done admirable work in this field: A. L. Bowley and G. H. Wood. In Germany there was only one, R. Kuczynski.

The following collection of wage statistics (and the figures given in the preceding appendices) contain generally all the wage data I have discovered for Germany for the years 1800–1914, as far as they were comparable for at least five consecutive years. Excluded from this survey are wages based on collective agreements which have been collected by R. Kuczynski;\* and I have used these statistics only for ascertaining the development of wages in a number of large towns.

The chief wage sources were publications of trade unions and their branches and the annual reports of the Chambers of Commerce; of the latter I studied about five thousand and found several hundred very useful indeed. In some instances I was also able to extract some useful wage material from a study of company reports.

In those cases where I did not use the wage data for the construction of the wage index I have with few exceptions given only the sources without the figures.

The index has many drawbacks. While it is somewhat improved as compared with its original form, I believe that the criticism which I have already made† still holds true, and should be repeated here. It is as follows:

\* His studies on this subject are quoted on the following pages.

† Cf. *Labour Conditions in Western Europe, 1820–1935*, p. 98.

The wage data are not only an admixture of trade union rates, general rates, and actual daily wages paid, but they contain also average weekly wages actually paid, thus including to some extent wage losses through short-time, as well as average yearly wages which also include losses through unemployment. Moreover, important industries are not covered, such as the food and clothing industries; for other industries wage data are available only for a part of the time under review. Especially poor are the statistics of agricultural wages which are taken from a number of sources, the reliability and significance of which I was not able to check; many interpolations had to be made to arrive at an index of agricultural wages. Furthermore, the various industrial areas of Germany are not adequately covered, and the wages of this or that region, in this or that branch of an industry, very often were given too great a weight as compared with the number of workers employed (though, of course, the industries themselves are weighted properly). City wages preponderate to much too high a degree.

But while I am sure that a more extensive survey than I was able to make of German wages material would yield better year-to-year data, I do not believe that it would make any difference in the trend of wages as shown in this study.

Before mentioning the wage data on which the index is based, it is necessary to indicate how I used them, how the general index and the individual indices for the various industries were constructed.

In general, when computing an index for an industry, the various statistical series were not weighted. That is, printers' wages in Berlin and in Nuremberg were "weighted" each with one; the same is true of wages for various occupations (carpenters and joiners, for instance) and for various factories within the same industry. In the building trades I constructed for the years up to 1870 one index for each, the masons, the carpenters, and the unskilled workers; these three indices were then weighted each according to the number of workers employed. Since 1870 all wage series were combined into one index without weighting them; if wages for the Reich as a whole were available, the wage series for individual cities were used only for purposes of interpolation. In the woodworking industry I used for Wurtem-



berg only the figures for joiners. In the printing trades I used for the years 1904-1913 only the data on actual wages paid. In transport, I did not weight the wage series within the three chief branches: railways, shipping, road transport; but the three resulting indices, of course, were weighted according to the numbers employed. In mining, the various indices were weighted according to the number of workers employed.

The finally resulting general index is the result of weighting the various industrial indices according to the number of workers employed in each of the industries, and according to the wage level prevailing. I have computed also an index of wages weighted only according to the number of workers employed, and the difference between this one and the one taking into account the wage level in the various industries is not very great. This does not prove that it was not worth while going to the trouble of constructing an index taking into account the wage level, but it tends to confirm my criticism that the index is overweighted with relatively high paying industries and high paying regions. If, for instance, wages paid in home industries and in the food and clothing industries had been taken into account, if wages in small manufacturing towns with practically no heavy industry—and with a considerable number of absolutely and relatively low paid workers in textiles and other low paying consumption goods industries—could have been added to this index, I am sure the index which took into account only the amount of employment would, in the course of time, have differed considerably from the theoretically superior one which also takes into account the differences in the relative wage level in various industries; for the weight of high and low paying industries in German economy has changed, of course.

*As it might justly be regarded as inappropriate at the present time to plead at length for the foundation of an institute for research into the history of labour conditions I do so only in this appendix. I hope that soon we shall be able to give this more prominence, for such institutes are really needed in all countries and could make available much material, useful also in post-war reconstruction.*

WAGES, 1870 TO 1914 (*in Marks*)

## I. WAGES OF BUILDING TRADE WORKERS

## A.1. WEEKLY WAGES OF MASONS, 1870 TO 1885

Year	Berlin	Bochum*	Chemnitz	Elberfeld	Gelsenkirchen*	Glauchau	Hamburg	Nuremberg	Rostock
1870	18.00	—	13-16.50	—	—	12.00	18.00	13.20	15.00
1871	18.00	18.00	13-16.50	—	24.00	12-16.50	18.00	13.44	15.00
1872	25.50	24.00	13-16.50	—	27.00	12-16.50	21.00	16.08	17.22
1873	27.00	27.00	18-18.50	—	30.00	15-18.00	25.00	18.72	18.00
1874	27.00	24.00	15-18.00	—	27.00	15-18.00	30.00	20.04	18.00
1875	27.00	22.50	15-17.50	—	24.00	15-17.00	30.00	20.46	19.50
1876	25.32	21.00	15-15.50	—	18.00	15-16.00	30.00	20.58	22.50
1877	—	16.50	14.00	—	15.00	12.25	30.00	20.16	21.00
1878	—	18.00	12.75	—	15.00	12.00	30.00	20.52	21.00
1879	—	15.00	13.00	17.58	15.00	11.88	30.00	20.04	19.20
1880	—	18.00	15.00	17.82	14.40	11.75	30.00	20.34	19.20
1881	19.50	18.00	13.50	17.46	15.60	11.50	30.00	20.46	19.20
1882	18.00	19.80	13.91	17.88	21.60	11.50	30.00	19.50	19.20
1883	22.50	21.00	14.33	17.40	18.00	11.50	30.00	19.08	19.20
1884	22.50	19.50	14.72	17.94	21.00	12.00	30.00	19.62	19.20
1885	26.82	21.00	15.35	19.02	21.00	13.00	30.00	20.82	19.20

## A.2. WEEKLY WAGES OF MASONS, 1885 TO 1903

Year	Berlin	Dresden	Elberfeld	Hamburg	Kiel	Leipzig	Luebeck	Nuremberg	Rostock	Reich†
1885	26.82	20.46	19.02	30.00	21.60	21.00	19.20	20.82	19.20	3.11
1886	29.76	23.10	20.40	30.00	—	22.80	21.00	20.58	21.00	—
1887	29.76	23.76	20.64	30.00	24.00	24.00	24.00	20.70	21.00	—
1888	30.00	25.41	22.14	36.00	25.50	24.60	—	20.76	22.20	—
1889	33.78	24.42	21.06	36.00	27.00	28.80	—	21.90	24.00	—
1890	33.18	23.76	22.80	36.00	30.00	27.00	27.00	21.66	25.20	3.62
1891	33.12	22.44	21.72	36.00	—	—	27.00	21.84	25.20	—
1892	32.88	22.44	21.66	36.00	—	—	27.00	21.90	25.20	—
1893	33.00	22.44	22.44	36.00	—	—	27.00	21.84	25.20	—
1894	33.00	23.76	22.32	36.00	30.00	23.10	27.00	22.02	25.20	—
1895	30.54	25.08	21.96	36.00	30.00	25.20	27.00	22.74	25.20	3.64
1896	30.90	25.80	22.80	36.00	30.00	27.00	27.00	23.40	25.20	—
1897	30.42	25.50	23.52	36.00	30.00	28.50	27.36	24.60	25.20	—
1898	32.64	26.40	24.12	36.00	29.64	29.64	27.36	25.44	25.20	—
1899	32.58	27.60	27.06	36.00	29.64	29.70	28.50	25.92	26.40	—
1900	33.90	27.00	28.86	37.02	31.35	29.70	30.21	25.98	26.40	4.28
1901	35.40	25.80	27.42	37.02	31.35	29.70	30.21	25.80	27.00	—
1902	35.28	25.80	27.24	37.02	34.20	29.70	30.21	25.68	27.00	—
1903	36.72	27.30	27.60	37.02	34.20	29.70	31.35	25.56	27.00	—

\* Wages of artisans.

† Per day.

A.3. WEEKLY WAGES OF MASONS, 1903 TO 1914

Year	Berlin	Dresden	Elberfeld	Hamburg	Kiel	Leipzig	Luebeck	Nuremberg	Rostock	Reich*
1903	36.45	26.33	27.60	37.05	34.20	29.70	31.35	25.80	27.00	—
1904	37.80	28.08	27.60	37.80	34.20	30.92	32.49	26.22	28.20	—
1905	39.42	29.84	29.40	37.80	34.20	32.40	32.49	28.50	28.20	4.60
1906	40.50	30.53	31.35	43.20	34.20	33.39	34.20	28.50	30.00	—
1907	40.50	30.45	32.20	43.20	36.72	34.45	34.20	31.35	30.00	—
1908	40.50	30.98	31.92	43.20	37.80	34.45	34.20	33.06	31.80	—
1909	40.50	31.50	31.92	—	37.80	34.98	35.34	33.63	33.00	—
1910	40.50	32.55	32.48	45.90	38.34	36.72	35.91	34.20	33.60	5.17
1911	42.12	33.60	33.60	45.90	39.42	37.10	37.05	35.34	34.80	—
1912	43.20	35.18	34.72	45.90	40.50	38.16	38.19	35.91	36.00	—
1913	44.28	36.75	35.84	48.60	40.50	40.81	39.33	37.05	37.20	—
1914	45.36	37.80	36.40	48.60	41.58	40.81	39.90	37.62	38.40	—

B.1. DAILY WAGES OF CARPENTERS, 1870 TO 1885

Year	Berlin	Nuremberg	Hamburg	Rostock	Quedlinburg	Kiel	Chemnitz†
1870	3.00	—	3.00	2.50	2.00	—	11.00
1871	3.00	—	3.00	2.50	2.00	—	11.40
1872	4.24	—	3.00	2.87	—	3.00	14.00
1873	5.31	—	4.00	3.00	2.40	3.60	15.00-15.60
1874	4.77	—	5.00	3.00	2.40	3.60	14.70-15.50
1875	4.50	—	5.00	3.25	2.40	3.60	14.50-14.90
1876	4.50	—	5.00	3.75	2.40	3.60	14.60
1877	—	—	5.00	3.50	2.40	3.60	12.00
1878	3.64	3.20	5.00	3.50	2.20	—	12.00
1879	3.27	3.23	5.00	3.20	—	—	12.25
1880	—	2.96	5.00	3.20	—	—	12.25
1881	—	3.02	5.00	3.20	—	—	13.00
1882	—	2.95	5.00	3.20	—	—	13.00
1883	—	2.93	5.00	3.20	—	—	13.00
1884	—	3.00	5.00	3.20	—	3.60	14.30
1885	4.25	3.12	5.00	3.20	2.20	3.60	14.97

B.2. DAILY WAGES OF CARPENTERS, 1885 TO 1914

Year	Berlin	Nuremberg	Hamburg	Dresden	Elberfeld	Rostock	Quedlinburg	Bremen	Kiel	Chemnitz	Reich
1885	4.25	3.12	5.00	2.75	3.25	3.20	2.20	3.04	3.60	2.50	3.34
1886	—	3.17	5.00	—	—	3.50	—	4.00	3.60	2.68	—
1887	5.01	3.16	5.00	—	—	3.50	2.40	4.25	4.00	2.74	—
1888	5.10	3.20	6.00	—	—	3.70	2.50	4.50	4.25	—	—
1889	5.70	3.20	6.00	—	—	4.00	2.60	4.75	4.50	—	—
1890	5.59	3.22	6.00	3.30	3.78	4.20	2.70	5.00	5.00	—	3.96
1891	5.60	3.39	6.00	—	3.78	4.20	2.80	5.00	5.00	—	—
1892	5.35	3.31	6.00	3.85	—	4.20	2.80	5.00	5.00	—	—
1893	5.32	3.34	6.00	3.85	—	4.20	2.80	5.00	5.00	—	—

\* Daily wage.

† Weekly wage.

B.2. DAILY WAGES OF CARPENTERS, 1885 TO 1914—*continued*

Year	Berlin	Nurem- berg	Ham- burg	Dres- den	Elber- feld	Ros- tock	Qued- linburg	Bremen	Kiel	Chem- nitz	Reich
1894	5·23	3·25	6·00	—	—	4·20	2·80	5·00	5·00	—	—
1895	5·26	3·53	6·00	3·78	3·67	4·20	2·80	5·00	5·00	3·19	4·00
1896	5·62	3·62	6·00	4·00	4·00	4·20	2·80	5·00	5·00	3·52	—
1897	5·14	3·62	6·00	4·10	4·00	4·20	3·00	5·00	5·00	3·52	—
1898	5·04	3·89	6·00	4·50	4·20	4·20	3·00	5·00	4·95	3·85	—
1899	5·47	4·02	6·00	4·50	4·73	4·40	3·00	5·00	4·95	4·07	—
1900	5·66	4·14	6·17	4·50	4·50	4·40	3·00	5·50	5·23	4·07	4·46
1901	5·87	4·17	6·17	4·25	4·50	4·50	—	5·46	5·23	—	—
1902	5·93	4·20	6·17	4·25	4·50	4·50	3·30	5·40	5·42	—	—
1903	6·11	4·26	6·17	4·65	4·80	4·50	3·40	5·40	5·70	—	—
1904	6·30	4·37	6·30	4·85	5·30	4·70	3·50	—	5·70	—	—
1905	6·57	4·65	6·75	5·10	5·22	4·70	3·70	5·63	5·70	4·31	4·83
1906	6·75	4·75	7·20	5·22	5·22	5·00	—	5·65	5·70	4·41	4·95
1907	6·75	5·22	7·20	5·22	5·70	5·00	4·00	5·85	6·12	4·78*	5·05
1908	6·75	5·51	7·20	5·31	5·70	5·30	4·20	5·85	6·30	4·85†	5·09
1909	6·75	5·61	7·20	5·40	5·70	5·50	—	5·85	6·30	5·05‡	5·19
1910	6·75	5·70	7·56	5·58	5·80	5·60	4·45§	5·94	6·39	5·35	5·34
1911	7·02	5·89	7·65	5·76	5·99	5·80	4·65¶	6·21	6·57	5·55**	5·44
1912	7·20	5·99	7·65	6·03	6·18	6·00	4·85††	6·39	6·75	5·80	5·63
1913	7·38	6·18	8·10	6·30	6·37	6·20	5·20	6·57	6·75	6·00	5·74
1914	7·56	6·27	8·10	6·48	6·46	6·50	5·20	6·75	6·93	6·40	5·89

## C.1. DAILY WAGES OF UNSKILLED WORKERS, 1870 TO 1885

Year	Barmen†‡	Bochum	Gelsen- kirchen	Hamburg	Hoerde	Nuremberg	Rostock
1870	3·03	—	—	2·25	—	1·54	1·75
1871	3·21	2·25	3·00	2·25	—	1·53	1·75
1872	3·57	2·70	3·50	2·55	—	1·84	1·75
1873	4·28	3·50	4·00	2·70	—	2·01	—
1874	4·64	3·00	3·50	3·30	—	2·11	2·25
1875	4·64	2·50	3·00	3·30	—	2·13	—
1876	—	2·50	2·00	3·30	—	2·20	2·50
1877	—	2·30	2·00	3·30	2·00	2·13	2·30
1878	—	2·50	2·30	3·30	—	2·22	2·25
1879	—	2·00	2·20	3·30	2·00	2·21	2·10
1880	—	2·50	1·80	3·30	1·80	2·12	2·05
1881	—	2·20	2·20	3·30	2·00	2·06	2·05
1882	—	2·60	2·80	3·30	2·50	2·03	2·00
1883	—	2·50	2·40	3·30	2·25	2·03	2·00
1884	—	2·70	2·50	3·30	2·00	2·00	2·00
1885	—	2·40	2·50	3·30	2·50	2·07	2·10

\* 4·62–4·94.

§ 4·30–4·60.

\*\* 5·50–5·60.

† 4·70–5·00.

|| 5·30–5·40.

†† 4·70–5·00.

‡ 4·90–5·20.

¶ 4·50–4·80.

‡‡ Dollars per week.

C.2. DAILY WAGES OF UNSKILLED WORKERS, 1885 TO 1899

<i>Year</i>	<i>Berlin</i>	<i>Bochum</i>	<i>Elberfeld</i>	<i>Gelsenkirchen</i>	<i>Hoerde</i>	<i>Hamburg</i>	<i>Nuremberg</i>	<i>Rostock</i>
1885	2.74	2.40	2.65	2.50	2.50	3.50	2.07	2.10
1886	2.83	2.20	2.50	2.30	2.50	4.00	2.09	2.00
1887	2.93	2.50	2.82	2.60	2.60	4.00	2.12	2.25
1888	3.10	2.80	2.69	2.90	2.50	4.00	2.17	2.50
1889	3.43	3.20	2.68	3.50	2.50	4.00	2.32	2.50
1890	3.40	3.00	2.83	3.20	3.00	4.00	2.24	2.60
1891	3.49	3.00-3.30	2.68	2.80	2.50	4.00	2.27	2.60
1892	3.39	3.20	2.58	3.00	2.75	4.00	2.30	2.60
1893	3.46	2.70	2.90	2.80	2.50	4.00	2.29	2.60
1894	3.39	2.70-3.20	2.90	3.00	2.50	4.00	2.28	2.60
1895	3.34	3.50-4.00	2.77	2.60	2.50	4.00	2.37	2.60
1896	3.41	—	2.54	—	2.90	4.00	2.53	2.60
1897	3.26	—	2.98	—	3.00	4.00	2.67	2.60
1898	3.48	—	3.15	—	3.50	4.00	2.71	2.60
1899	3.61	—	3.81	—	3.50	4.00	2.71	2.80

C.3. DAILY WAGES OF UNSKILLED WORKERS, 1899 TO 1903

<i>Year</i>	<i>Berlin</i>	<i>Dresden</i>	<i>Elberfeld</i>	<i>Frankfurt-on-Main</i>	<i>Hamburg</i>	<i>Kiel</i>	<i>Luebeck</i>	<i>Nuremberg</i>	<i>Rostock</i>
1899	3.61	3.20	3.81	3.50	3.80	4.28	3.80	2.71	2.80
1900	4.15	3.10	3.67	3.70	3.80	4.28	3.80	2.74	2.80
1901	3.94	3.10	3.50	3.70	3.80	4.28	3.80	2.74	2.90
1902	3.98	3.00	3.44	3.80	4.05	4.75	3.99	2.78	2.90
1903	4.32	3.40	3.51	4.00	4.05	4.75	3.99	2.75	3.00

C.4. WEEKLY WAGES OF UNSKILLED WORKERS, 1903 TO 1914

<i>Year</i>	<i>Berlin</i>	<i>Dresden</i>	<i>Elberfeld</i>	<i>Frankfurt-on-Main</i>	<i>Kiel</i>	<i>Leipzig</i>	<i>Luebeck</i>	<i>Nuremberg</i>	<i>Rostock</i>
1903	24.30	19.89	21.00	23.40	28.50	22.68	23.94	16.80	18.00
1904	24.30	21.65	21.60	24.57	28.50	22.68	25.08	17.10	18.60
1905	25.92	23.40	22.50	24.57	28.50	23.76	25.08	18.24	18.60
1906	27.00	24.42	25.65	25.74	28.50	24.91	26.79	18.24	19.20
1907	27.00	24.68	26.55	25.74	27.00	26.50	26.79	21.66	21.60
1908	27.00	25.20	26.32	25.74	27.00	26.50	26.79	22.80	22.80
1909	27.00	25.73	26.32	26.33	27.00	26.50	27.93	22.80	24.00
1910	27.00	27.30	26.88	27.50	28.08	27.56	28.50	26.79	24.60
1911	28.62	27.83	28.00	28.30	29.16	28.62	29.64	27.93	26.40
1912	29.70	29.40	29.12	29.42	30.24	30.21	30.78	29.07	27.60
1913	30.78	30.98	30.24	30.53	30.24	33.39	31.92	30.21	28.80
1914	30.78	32.03	30.80	31.64	30.78	33.39	32.49	31.35	30.00

All figures for building trades workers' wages refer to the summer.

Wages of masons are taken from the following: F. Paepflow, *Die Organization der Maurer Deutschlands, 1869-1899*; Paepflow und Boemelburg, *Das Maurergewerbe in der Statistik*; Zentralverband



der Maurer Deutschlands, *Statistische Erhebungen ueber die Lohn- und Arbeitsverhaeltnisse der Maurer Deutschlands fuer das Jahr 1890*; ditto, *Statistische Erhebungen des Zentralverbandes der Maurer Deutschlands fuer die Zeit vom 1. Oktober 1891 bis 30. September 1892*; ditto *Statistische Erhebungen ueber die Lohn- und Arbeitsverhaeltnisse der Maurer Deutschlands im Jahre 1900*; ditto, *Statistik der Lohnbewegungen im Jahre 1901 und 1902*; ditto, *Statistik der Lohnhoehe und Arbeitszeit im Jahre 1902*; ditto, *Statistik ueber Lohnhoehe und Arbeitszeit im Jahre 1904*; ditto, *Lohn- und Arbeitsbedingungen im Maurergewerbe, Statistik und Tarifvertraege 1905*; ditto, collections of the *Abgeschlossene Tarifvertraege* for the years 1907, 1908, 1909, 1910, 1911, 1912; "Der Grundstein," 1906 to 1915; Kober, *Bericht nebst Abrechnung ueber die Lohnbewegung der Hamburger Maurer vom Jahre 1899 bis 1903*; reports of the conferences of the Zentralverband der Maurer Deutschlands; Gustav Kessler, *Kurze Geschichte der deutschen Maurerbewegung*; *Beitrag zur Geschichte der Maurerbewegung in Dresden*; Heinrich Buerger, *Die Hamburger Gewerkschaften und deren Kaempfe von 1865 bis 1890*; Bund der Bau-, Maurer- und Zimmermeister zu Berlin, annual year-books of the guild; Deutscher Arbeitgeberbund fuer das Baugewerbe, *Zusammenstellung ueber die oertlichen Loehne und Arbeitszeiten der Maurer, Zimmerer und Bauarbeiter*; R. Kuczynski, *Die Entwicklung der gewerblichen Loehne seit der Begrueundung des Deutschen Reiches*; R. Kuczynski, *Arbeitslohn und Arbeitszeit in Europa und Amerika, 1870-1909*; R. Kuczynski, *Tarifliche Mindestloehne der Maurer und Bauhilfsarbeiter (Vierteljahreshefte des Statistischen Amts der Stadt Berlin-Schoeneberg, 1912)*; annual reports of the branches of the Zentralverband der Maurer, Berlin and Nuremberg; annual reports of the chambers of commerce of Dortmund, Chemnitz, Bochum and Dresden; Vockert, *Das Baugewerbe, dargestellt auf Grund der Leipziger Verhaeltnisse*; Erich Elsaesser, *Wirtschaftsentwicklung von Esslingen*; *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, 1873 and 1897; Erich Sperling, *Arbeitslohnentwicklung in Handwerk und Industrie*; *First Annual Report of the Commissioner of Labor*, Washington 1886; *State of Labor in Europe*, U.S. Department of State, Washington, 1879; U.S. Department of State, *Consular Reports*, 1885 and 1887; annual reports of a considerable number of local trades councils.

For wages of carpenters I used, apart from a number of sources

quoted for the masons, Zentralverband der Zimmerer, the reports of the conferences and the year-books; ditto, *Feststellungen ueber Arbeitszeit und Loehne sowie Mitgliederzahl des Zentralverbandes der Zimmerer fuer die Jahre 1885 to 1915*; ditto, *Statistisches aus der deutschen Zimmererbewegung im 19. Jahrhundert*; ditto, *Sammlung der abgeschlossenen Tarifvertraege fuer die Jahre 1907 bis 1912*; *Der Zimmerer, 1907 to 1915*; A. Bringmann, *Geschichte der deutschen Zimmererbewegung*; *Kurze Darstellung der Geschichte der Lohnbewegungen und Organisation der Bauhandwerker in Quedlinburg*; *Die Bremische Zimmererbewegung, 1868 to 1904*; annual reports of various branches of the Zentralverband der Zimmerer.

For wages of unskilled workers I used in addition to a number of sources quoted above, Deutscher Bauarbeiterverband, *Lohn- und Arbeitszeit der Maurer und Bauhilfsarbeiter in Deutschland, 1913*.

## II. WAGES OF METAL WORKERS

### I. WAGES, 1870 TO 1889

	Essen	Stettin	Bochum	Munich Loco-	Chemnitz§ Machine	Augsburg‡	Hanover§	Nurem- berg* Machine
Year	Krupp*	Vulkan†	Huetten‡	motives‡	Fitters	Carpenters	Machine Factory	Carpenters
1870	3·08	2·32	904	742	15·00	11-14·00	732	—
1871	3·03	2·36	841	740	15·50	11-14·00	806	—
1872	3·39	2·67	986	851	17·50	11-14·00	754	—
1873	3·74	3·00	1,152	986	17·00	16·50	778	—
1874	3·86	3·12	1,190	1,065	17·50	17·00	773	—
1875	3·89	2·94	1,114	1,074	16·50	17·00	1,123	20·36
1876	3·64	2·56	988	1,018	16·50	16·50	1,060	17·68
1877	3·36	2·69	889	1,052	14·74	14·40	1,029	17·06
1878	3·21	2·61	909	1,034	15·61	14·90	1,040	17·45
1879	3·02	2·53	903	965	15·69	15·90	981	17·00
1880	3·19	2·53	875	996	16·09	17·20	1,042	16·84
1881	3·50	2·53	926	987	17·79	18·30	1,037	18·31
1882	3·57	771	957	1,016	18·48	19·18	1,022	20·26
1883	3·55	745	953	1,004	18·32	19·07	1,023	21·37
1884	3·55	777	963	974	18·41	20·04	990	22·05
1885	3·64	746	964	933	18·39	19·55	990	21·93
1886	3·71	783	943	925	18·57	19·71	934	20·81
1887	3·71	790	980	927	18·62	20·14	905	20·07
1888	3·71	—	995	995	—	—	968	20·33
1889	3·83	—	1,018	1,034	—	—	958¶	21·54**

\* Per day. † Per day and per year. ‡ Per year. § Per week.

|| The yearly figure is 760 mark. ¶ The figure for 1890 is 950 mark.

\*\* The figures for 1890 to 1894 are: 23·28; 24·69; 25·23; 25·20 and 24·75.

## 2. WAGES, 1889 TO 1914

	<i>Essen</i>	<i>Duisburg†</i>	<i>Bochum†</i>	<i>Munich†</i>	<i>Berlin‡</i>	<i>Halle†</i>	<i>Jena‡</i>	<i>Nurem- berg*</i>
<i>Year</i>	<i>Krupp*</i>	<i>Metal Construction</i>	<i>Huetten</i>	<i>Loco- motives</i>	<i>Machines</i>		<i>Zeiss</i>	
1889	3·83	1,022§	1,018	1,034	—	—	—	3·70
1890	3·95	1,050	1,058	1,051	—	—	—	3·79
1891	4·05	1,086	1,074	1,076	27·66	1,326	—	3·78
1892	4·06	1,083	1,115	1,104	26·40	1,270	—	3·82
1893	4·09	1,093	1,057	1,063	25·08	1,273	—	3·81
1894	4·06	1,094	1,081	1,079	25·98	1,290	—	3·79
1895	4·10	1,074	1,090	1,063	27·19	1,279	—	3·82
1896	4·24	1,121	1,127	1,088	27·38	1,388	—	4·05
1897	4·48	1,100	1,165	1,090	27·65	1,351	—	4·01
1898	4·57	1,171	1,205	1,099	28·57	1,340	—	4·08
1899	4·72	1,165	1,252	1,138	29·23	1,466	—	4·28
1900	4·78	1,203	1,287	1,180	28·91	1,460	34·68	4·34
1901	4·63	1,116	1,267	1,170	27·83	1,400	35·16	4·38
1902	4·52	1,119	1,206	1,134	27·11	1,313	34·12	4·42
1903	4·56	1,103	1,216	1,182	27·59	1,362	30·66	4·43
1904	4·88	—	1,255	1,223	28·41	1,444	33·24	—
1905	5·12	—	1,271	1,112	30·02	1,474	35·46	—
1906	5·35	—	1,328	1,252	31·42	1,443	36·30	—
1907	5·35	—	1,415	—	32·16	1,437	36·84	—
1908	5·35	—	1,451	—	—	1,468	37·20	—
1909	5·44	—	1,378	—	—	—	38·10	—
1910	5·51	—	1,426	—	—	—	39·00	—
1911	5·59	—	1,463	—	—	—	39·66	—
1912	5·69	—	1,465	—	—	—	40·44	—
1913	5·91	—	1,552	—	—	—	40·62	—
1914	—	—	1,571	—	—	—	39·30	—

## 3. WAGES, 1904 TO 1913

	<i>Danzig*</i>	<i>Hanover‡</i>	<i>Koenigsberg‡</i>	<i>Neukoelln‡</i>	<i>Saarbruecken‡</i>
<i>Year</i>	<i>Moulders</i>	<i>Skilled</i>	<i>Unskilled</i>	<i>Fitters</i>	<i>Turners</i>
1904	3·44	22·40	18·20	21·60	—
1905	3·09	23·80	18·50	21·00	29·50
1906	3·40	25·40	20·20	21·60	32·75
1907	3·39	24·60	19·90	24·00	34·30
1908	3·48	24·70	20·10	24·60	28·15
1909	3·68	25·30	20·70	23·40	32·00
1910	3·75	24·80	20·10	24·00	30·00
1911	3·85	26·20	20·50	24·60	32·75
1912	3·58	24·80	19·50	25·20	30·15
1913	4·10	26·50	21·10	25·20	31·90

\* Per day.

† Per year.

‡ Per week.

§ Wage in 1887 was 1,034 mark.

Wages for Wuerttemberg are taken from *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1873 and 1897.

Wages for the years 1825-1870: Krupp, Essen see *Krupp-Studien*, *Thuenen-Archiv*, *Jahrgang* 2, and annual reports of the Chamber of Commerce of Essen; Chemnitz, see annual reports of the Chamber of Commerce of Chemnitz; Augsburg, machine industry, see J. Grassmann, *Die Entwicklung der Augsburger Industrie*; Munich, locomotive factory, see E. Guenther, *Die Entlohnungsmethoden in der bayerischen Eisen- und Maschinenindustrie*.

Wages for the years 1870-1914: Krupp, Essen see above; Stettin, Stettiner Maschinenbau A.G. "Vulkan," see annual reports of the company and annual reports of the Vorsteher der Kaufmannschaft Stettin; Bochum, Bochumer Verein fuer Bergbau und Gusstahlfabrikation, see annual reports of the Chamber of Commerce for Bochum, and Daebritz, *Bochumer Verein fuer Bergbau und Gusstahlfabrikation*, *Jubilaeumsschrift*; Munich, locomotive factory, see above; Chemnitz, see above; Augsburg, see above; Hanover, Hannoversche Maschinenbau A.G., annual reports of the company; Nuremberg, see R.

### III. WAGES OF TEXTILE WORKERS

#### I. WAGES, 1870 TO 1885

Year	Hofer Cotton Industry			Algaeu District*		Rhineland†		Augsburg*
	Cotton Mechanical		Spinners	Spinning	Cotton Industry		Weavers‡	Cotton Spinning
	Spinning	Weaving			Weaving	Carders		
1870	—	—	—	—	—	4·73	4·11	355
1871	383	—	627	—	—	4·00	3·57	368
1872	438	—	747	—	—	5·20	4·79	398
1873	477	580	774	467	496	5·41	5·01	390
1874	490	638	774	484	523	5·47	5·27	411
1875	499	666	793	498	561	5·80	5·40	426
1876	520	672	829	502	570	6·12	5·26	446
1877	529	—	802	513	532	6·24	5·43	445
1878	—	657	—	516	538	6·43	5·34	456
1879	—	614	—	517	561	6·35	5·34	457
1880	493	605	820	508	539	6·33	5·43	437
1881	529	593	982	496	544	6·24	5·55	447
1882	529	578	1,004	497	513	6·26	5·32	439
1883	523	597	1,022	503	519	6·46	5·33	437
1884	542	632	1,102	508	562	6·44	5·47	424
1885	554	—	1,108	507	555	6·39	5·40	441§

\* Per year. † Dollars per two weeks. ‡ In the printing section.

§ Figures for 1886 to 1890 are: 453; 454; 463; 453; 473.

## 2. WAGES, 1885 TO 1914

Year	Hofer Cotton Industry*			Allgau District*		Erz Mountains†		Alsace‡		Crefeld§	
	Spin-ning	Mech. Weaving	Spin-ners	Spin-ning	Weav-ing	Weavers	Un-skilled	Spin-ners	Twis-ters	Weavers	Velvet Winders
1885	554	—	1,108	507	555	—	—	24·48	14·50	—	—
1886	560	—	1,132	507	569	—	—	24·72	14·50	—	—
1887	573	—	1,269	510	577	—	—	24·72	14·75	—	—
1888	560	693	1,132	519	567	—	—	25·45	15·00	—	—
1889	563	—	1,117	516	563	15·54	7·13	26·10	15·00	3·02	1·78
1890	594	613	1,123	507	570	17·08	10·11	26·40	15·60	3·03	2·05
1891	588	601	1,102	517	584	15·27	8·85	27·06	16·20	3·21	2·04
1892	585	—	1,138	526	578	15·19	9·16	27·42	15·48	2·77	1·57
1893	591	612	1,169	533	579	16·28	8·81	27·96	15·72	3·35	1·94
1894	588	—	1,132	535	583	16·72	8·55	27·96	16·26	2·47	1·37
1895	594	—	1,157	548	575	16·62	8·76	28·32	16·14	2·99	2·06
1896	630	—	1,252	560	583	15·50	8·59	29·64	16·26	2·89	1·78
1897	646	658	1,242	562	594	15·18	8·71	30·45	16·26	2·89	1·78
1898	630	679	1,163	566	603	14·87	8·65	30·15	15·96	3·15	2·14
1899	649	689	1,190	565	610	15·68	8·91	30·24	15·60	3·56	2·15
Oberfranken											
1900	655	689	1,181	562	627	17·28	9·68	Coloured Weaving	—	3·62	2·13
1901	652	682	1,132	579	636	17·81	10·23	—	—	3·60	2·16
1902	667	710	1,172	598	630	18·64	10·20	12·20	—	3·73	2·32
1903	667	725	1,193	608	651	18·58	10·53	—	—	3·37	2·10
1904	676	728	1,245	614	683	18·03	10·40	—	—	—	—
1905	685	754	1,273	599	685	19·76	11·46	12·55	—	—	—
1906	695	765	1,285	583	695	20·71	11·65	12·70	—	—	—
1907	744	808	1,322	589	712	21·14	12·49	13·60	—	—	—
1908	753	829	1,288	595	713	19·57	11·93	13·80	—	—	—
1909	750	811	1,313	592	725	20·63	12·12	13·70	—	—	—
1910	750	814	1,276	579	760	21·38	12·58	—	—	—	—
1911	756	802	1,288	598	800	21·62	12·38	13·80	—	—	—
1912	756	842	1,270	636	835	22·52	13·20	13·80	—	—	—
1913	771	857	1,304	648	849	24·22	13·52	14·05	—	—	—
1914	—	—	—	653	849	—	—	—	—	—	—

Kuczynski, *Arbeitslohn und Arbeitszeit in Europa und Amerika, 1870–1909*; Duisburg, A.G. fuer Eisenindustrie und Brueckenbau, see annual reports of the company; Berlin, Berliner Maschinenbau A.G., see annual reports of the company; Halle, Hallesche Maschinenfabrik und Eisengiesserei, see annual reports of the company; Jena, Zeiss, see Walter Voigt, *Die Loehne in den Stiftungsbetrieben Carl Zeiss und Schott & Gen. und die Preisentwicklung in Jena, 1900–1919*.

\* Per year.

† Per week.

‡ Per week. The figures for 1900 to 1902 are: 30·60; 30·96; 31·08; and 15·54; 15·42; 15·48.

§ Per day.

|| Per week, in the country; the figure for 1900 is 12·00.



Wages for the years 1904-1913: all figures are taken from an unpublished investigation by R. Kuczynski, with the exception of the figures for Hanover, which are to be found in *Statistische Vierteljahresberichte der Stadt Hannover, 19. Jahrgang, 1913, Heft. 3*. All figures refer to the machine building industry and, with the exception of Hanover, to one establishment in each town only; all figures are for June of each year and computed from the wage registers in the factories.

Further sources and remarks: numerous annual reports of companies in the metal industry contain figures on wages which, however, only refer to a few years and usually stop at the beginning of the twentieth century; the sudden disinclination to publish wage figures which we observe in the present century is due to the fact that by that time the trade unions had begun to make a systematic study of the annual reports of such companies. None of these reports give wages for more than twelve years, as far as I have discovered; otherwise I would have included the data. The annual reports of the Chambers of Commerce also contain some wage data, but always only for a few years, otherwise they were included in the above tables. Figures for foundry workers for some years during the period 1866-1875 can also be found in Frief's *Die Wirtschaftliche Lage der Fabrikarbeiter in Schlesien und die zum Besten derselben bestehenden Einrichtungen*, Breslau, 1876.—

Textile wages for Wuerttemberg and Meerane, 1820-1872, are taken from *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1873 and 1897; J. H. Leopold, *Chronik und Beschreibung der Fabrik- und Handelsstadt Meerane*, 1863.

Wages 1841-1870: J. Grassmann, *Die Entwicklung der Augsburger Industrie im 19. Jahrhundert*; the First Annual Report of the Commissioner of Labor, Washington D.C., 1886; *Report of an Enquiry by the Board of Trade into Working Class Rents, etc., in the Principal Industrial Towns of the German Empire*, London, 1908.

Wages 1859-1870: *State of Labor in Europe, 1878*, U.S. Department of State, Special Consular Report, Washington D.C., 1879; *Bericht der Handels- und Gewerbekammer zu Dresden, 1877-1880*; annual reports of the Handels-und Gewerbekammer of Chemnitz, 1864 ff.; A. Zimmermann, *Blute und Verfall des Leinengewerbes in Schlesien*.

Wages 1870-1885: Karl Schmid, *Die Entwicklung der Hofer Baumwollindustrie*; *Jubilaumsschrift der Spinnerei und Weberei Kottern (Allgaeu)*; J. Grassmann, see above; The First Annual Report of the Commissioner of Labor, Washington, D.C., 1886.

Wages 1885-1914: Karl Schmid, see above; *Jubilaumsschrift Kottern*, see above; Rudolf Groeber, *Nominallohn und Reallohn, die Loehne in der erzgebirgischen Strumpfindustrie von 1889 bis 1928*; *Schriften des Vereins fuer Sozialpolitik*, Vol. CV, *Die Stoerungen im deutschen Wirtschaftsleben waehrend der Jahre 1900, ff.*, Vol. I, *Textilindustrie*; H. Brauns, *Der Uebergang von der Handweberei zum Fabrikbetrieb in der niederrheinischen Samt- und Seidenindustrie und die Lage der Arbeiter in dieser Periode*; Carl Hofmann, *Die Hausweberei in Oberfranken*.

Further sources and remarks: apart from the figures given above, the following data were used in the construction of the index of wages: highest wages of spinning masters in a thread factory in Augsburg (see the above-mentioned book by Grassmann): per week, in marks, 1840, 32.00; 1845, 37.71; 1850, 38.78; 1860, 41.14; 1890, 54.60; Fr. Buehler, *Die Entwicklung der Tuchindustrie in Lambrecht*, wages per day in the cloth industry: 1832, 0.91 mark; 1846, 0.97; 1860, 1.14; 1870, 1.37 for male workers; *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1897, daily wages for women in cotton spinning, 1858, 80.1 pfennig; 1868, 115.7, 1881, 147.5; annual reports of the Chamber of Commerce of Hirschberg and Schoenau, wage rates in the worsted industry remained the same from 1873 to 1888.

Further material which was neither included in the above tables nor used in the construction of the index of textile wages is plentiful but usually refers to only a few years. The figures, given above from the annual reports of the Chamber of Commerce for Chemnitz continue up to 1878 and refer to more occupations and towns in Saxony; in the above quoted volume of the Verein fuer Sozialpolitik some figures for the Bielefeld linen industry can be found; the *Zeitschrift des Koeniglich Saechsischen Statistischen Bureaus*, 1877, gives highly interesting figures of wages in Meerane for four years; the *Jubilaumsschrift* of the Wollwarenfabrik H. Levin contains weekly wages in five-year intervals for the years 1877-1913; the annual reports of the

Chamber of Commerce for Frankfort-on-Main give figures of average daily wages during the years 1886-1890 in the A.G. fuer Spinnerei und Weberei, Oberursel; in the above quoted annual reports of the Chamber of Commerce for Dresden wage data are quoted for more districts than are given above, and the figures refer also to the years from 1872 to the first half year of 1878; it is possible to construct an index of wages in various textile occupations on the basis of data given for the years 1881-1889 in the *Statistische Jahrbuch der Stadt Berlin*; useful figures for the years 1894-1898 are contained in the *Berichte ueber Industrie und Handel der Stadt und des Landratsbezirks Gera*, 1895 ff.; the *Arbeits-Statistik der Deutschen Gewerkvereine* for the years 1880-1906 contains considerable, but only partially comparable, data on wages paid in numerous localities; the annual reports of the Chamber of Commerce in Liegnitz give wages for weavers in Liegnitz and Bunzlau during the years 1889-1894; in the U.S. American Consular Reports, *State of Labor in Europe*, 1878, quoted above, one finds data for more occupations than given above, and also data for Chemnitz and Dresden; H. Brauns and Schmid, in their above quoted books, also give wages for more occupations than are reproduced in the above tables; Th. Neff, in his study on the textile industry in Oberfranken, gives an average wage for spinners for the years 1894-1907; E. Ilgen, in his book, *Die Preisentwicklung der Baumwollfabrikate seit 1890*, gives a table on annual wages for a number of years between 1865 and 1912.

#### IV. WAGES OF WOODWORKERS

##### I. WAGES, 1870 TO 1887

Year	Wuerttemberg*		Hamburg*	Barmen†	Chemnitz‡	Year	Chemnitz
	Joiners	Piano Factories	Carpenters	Carpenters	Carpenters		Carpenters
1870	—	—	—	3.45	14.00	1877	14.25
1871	—	—	2.70	3.57	16.00	1878	14.25
1872	2.37	4.14	2.70	3.92	17.00	1879	14.50
1873	—	—	—	3.92	—	1880	14.50
1874	—	—	—	5.00	—	1882	13.83
1875	—	—	—	5.35	—	1883	14.00
1881	2.21	3.00	—	—	13.50	1885	15.83
1884	—	—	2.75§	—	15.78	1886	16.23
						1887	16.69

\* Per day.

† Dollars per week.

‡ Per week

§ The wages in 1886 and 1887 were 3.33 and 3.80.

## 2. WAGES, 1877 TO 1887

Year	Nuremberg Cabinet Makers*	Berlin	Breslau	Stolp Carpenters†	Halle	Zeitz Carpenters†
1877	2·33	—	—	—	—	—
1878	2·33	—	—	—	—	—
1879	2·50	2·50	—	—	—	—
1880	2·72	—	—	—	—	—
1881	2·83	2·50	13·00	12·00	12·00	13·50
1882	2·93	2·50	12·00	9·00	15·00	13·50
1883	2·94	—	12·00	10·50	18·00	13·50
1884	2·88	—	12·00	12·00	15·00	13·50
1885	2·87	3·08	14·00	12·00	12·00	18·00
1886	2·92	3·14	14·00	10·50	16·00	16·50
1887	3·06	3·18	14·00	10·00	15·00	17·00

## 3. WAGES, 1887 TO 1903

Nuremberg Berlin Nuremberg‡ Berlin Liegnitz† Stolp† Striegau† Zeitz† Bremen\* Reich†

Year	Carpenters*		Cabinet Makers*		Carpenters						
1887	3·20	3·10	3·00	3·18	11·00	10·00	12·00	17·00	—	—	—
1888	3·20	3·31	3·08	4·05	—	—	—	—	3·38	—	—
1889	3·16	3·59	3·17	4·10	—	—	—	—	3·56	—	—
1890	3·29	3·55	3·02	4·03	—	—	—	—	3·40	—	—
1891	3·26	3·62	3·31	3·96	12·00	12·00	10·00	20·00	3·50	—	—
1892	3·35	3·77	3·39	3·98	—	—	—	—	3·85	—	—
1893	3·39	3·81	3·39	4·08	—	—	—	—	3·92	18·69	—
1894	3·28	3·88	3·21	4·89	11·00	13·00	12·00	18·00	4·06	—	—
1895	3·31	4·18	3·31	4·95	—	—	—	—	4·02	—	—
1896	3·48	4·00	3·42	4·86	—	—	—	—	4·04	—	—
1897	3·46	4·15	3·46	4·90	12·00	13·00	12·00	17·00	4·04	19·96	—
1898	3·47	4·35	3·50	5·02	—	—	—	—	4·23	—	—
1899	3·52	4·92	3·48	5·28	—	—	—	—	4·17	—	—
1900	3·89	4·87	3·37	6·09	15·00	15·00	13·00	18·00	4·21	—	—
1901	3·66	5·16	3·64	6·47	—	—	—	—	4·25	—	—
1902	3·76	5·20	3·61	6·43	—	—	—	—	4·25	21·79§	—
1903	3·76	5·14	3·61	6·46	14·00	17·00	13·50	17·00	4·58	—	—

## 4. WAGES, 1903 TO 1914\*

	Bremen	Gera	Frankfort- on-Main	Hamburg	Leipzig	Luebeck	Nuremberg	Stuttgart.
Year	Carpenters	Wood- Workers	Joiners	Cabinet Makers	Carpenters		Cabinet Makers	
1903	4·05	2·90	4·37	4·40	—	4·09	3·78	3·42
1904	4·05	3·00	4·37	4·50	4·14	4·28	3·78	3·61
1905	4·46	3·33	4·37	4·77	4·24	4·28	3·78	3·80
1906	4·59	3·33	4·66	4·95	4·24	—	3·87	3·80
1907	4·59	3·33	4·77	4·95	4·68	—	3·87	3·80
1908	4·68	3·33	4·77	5·08	4·77	4·67	4·00	4·05
1909	4·77	3·33	4·95	5·22	4·86	4·77	4·14	4·05

\* Per day.

† Per week.

‡ Machine workers.

§ The figure for 1906 is 25·18.

4. WAGES, 1903 TO 1914\*—continued

	Bremen	Gera	Frankfort-on-Main	Hamburg	Leipzig	Luebeck	Nuremberg	Stuttgart
Year	Carpenters	Wood-Workers	Joiners	Cabinet Makers	Carpenters		Cabinet Makers	
1910	4.86	3.59	4.95	5.22	4.95	5.04	4.23	4.50
1911	5.04	3.96	5.13	5.22	5.04	5.04	4.32	4.68
1912	5.22	3.96	5.31	5.46	5.13	5.04	4.59	4.77
1913	5.40	3.96	5.49	5.53	5.22	5.67	4.77	5.04
1914	5.40	3.96	5.58	5.53	5.40	5.67	4.95	5.13

5. WAGES, 1904 TO 1913†

	Coblenz	Danzig	Flensburg	Hanover	Kiel	Munich	Saar-bruecken	Strassburg
Year	Furniture Factory	Carpenters	Carpenters	Carpenters	Carpenters	Carpenters	Joiners	
1904	20.15	20.25	23.55	24.70	27.95	25.65	24.00	23.35
1905	20.45	21.15	25.05	25.10	29.05	26.15	23.95	24.35
1906	21.30	21.05	25.05	26.50	29.15	29.80	26.20	25.20
1907	21.25	23.65	25.80	26.60	29.15	28.45	27.70	25.65
1908	22.25	24.30	27.35	28.80	31.30	29.05	27.50	27.55
1909	23.25	25.50	27.10	29.20	31.30	29.70	27.85	27.70
1910	22.60	25.90	27.45	29.90	31.85	30.60	29.00	27.80
1911	22.90	27.00	28.75	30.80	32.40	31.70	30.95	28.85
1912	23.80	26.75	29.25	31.60	33.50	32.40	31.85	29.15
1913	24.45	28.50	30.00	32.70	34.55	32.90	32.95	31.55

Wages for 1830–1887: *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1873 and 1897; annual reports of the Chamber of Commerce in Chemnitz; H. Buerger, *Die Hamburger Gewerkschaften und deren Kaempfe von 1865 bis 1890*; *State of Labor in Europe*, 1878, U.S. Department of State, Special Consular Report, Washington, 1879.

Wages for the years 1877–1887: R. Kuczynski, *Die Entwicklung der gewerblichen Loehne seit der Begrueundung des Deutschen Reichs*; R. Kuczynski, *Arbeitslohn und Arbeitszeit in Europa und Amerika, 1870–1909*; *Arbeits-Statistik der Deutschen Gewerkvereine* (Hirsch-Duncker).

Wages for the years 1887–1903: aside from the above quoted sources, see *Report of an Enquiry by the Board of Trade into Working Class Rents, etc., in the Principal Industrial Towns of the German Empire*, London, 1908; the figures quoted from this source for Bremen are those for the highly paid workers; figures for the Reich are quoted from *Arbeitszeit und Loehne in der Holzindustrie, Ergebnisse einer Statistik des Deutschen Holzarbeiterverbandes vom November, 1906*.

\* Per day.

† Per week.



Wages for the years 1903-1914: see year-books of the Deutsche Holzarbeiterverband, 1907-1915; *Holzarbeiter-Zeitung*, 1908-1915; various reports by trades councils; annual reports of the Gewerbekammer, Leipzig.

Wages for the years 1904-1913: all figures taken from an unpublished investigation into actual wages paid, by R. Kuczynski, with the exception of the figures for Hanover, which are taken from *Statistische Vierteljahrsberichte der Stadt Hannover*, 19. Jahrgang, 1913, Heft 3; all figures, except those for Hanover, refer to one establishment in each town only and to wages paid in June.

Further sources and remarks: the annual reports of the Chamber of Commerce for Liegnitz give wage data from the middle of the eighties to the middle of the nineties for Liegnitz, Bunzlau, Jauer and other neighbouring towns; the annual reports of the Chamber of Commerce of Chemnitz contain wage data for more occupations than given above and for a number of towns in the neighbourhood of Chemnitz for the years 1860 and 1864 to 1887; the Jubilaeumsschrift der Firma Otto Kaufmann gives for five-year intervals wage data for the years 1886-1911; numerous other towns are covered by the *Arbeits-Statistik der Hirsch-Duncker'schen Gewerkvereine*.

## V. WAGES IN THE PRINTING TRADES

### 1. WAGES OF COMPOSITORS, PER 1,000 N, 1870 TO 1872

Year	Berlin	Halle	Kassel	Leipzig	Munich	Stuttgart	Wuerzburg
1870	0·34	0·30	0·25	0·29	0·27	0·29	0·26
1871	0·34	0·33	0·30	0·30	0·29	0·29	0·26
1872	0·39	0·33	0·30	0·35	0·29	0·32	0·26

### 2. WEEKLY WAGES OF PRINTERS, 1872 TO 1914

Year	Berlin	Frankfort-			Hanover	Leipzig	Munich	Stuttgart
		Breslau	on-Main	Hamburg				
1872	22·50	—	18·86	21·00	22·50	—	18·86	—
1873*	26·00	—	—	—	22·43	22·75	21·45	21·45
1874	26·00	—	—	—	22·43	22·75	21·45	21·45
1875	26·00	—	—	—	22·43	22·75	21·45	21·45
1876†	24·38	22·43	—	23·40	21·94	22·75	21·45	21·45
1877	24·38	22·43	—	23·40	21·94	22·75	21·45	21·45
1878‡	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1879	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45

\* From May 9th.

† From July 1st.

‡ From October 1st.

2. WEEKLY WAGES OF PRINTERS, 1872 TO 1914—*continued*

*Frankfort-*

<i>Year</i>	<i>Berlin</i>	<i>Breslau</i>	<i>on-Main</i>	<i>Hamburg</i>	<i>Hanover</i>	<i>Leipzig</i>	<i>Munich</i>	<i>Stuttgart</i>
1880	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1881	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1882	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1883	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1884	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1885	23·40	21·45	21·45	22·43	21·45	21·45	21·13	21·45
1886†	24·60	22·55	23·06	24·60	22·55	23·06	22·55	22·55
1887	24·60	22·55	23·06	24·60	22·55	23·06	22·55	22·55
1888	24·60	22·55	23·06	24·60	22·55	23·06	22·55	22·55
1889	24·60	22·55	23·06	24·60	22·55	23·06	22·55	22·55
1890‡	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1891	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1892	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1893	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1894	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1895	25·63	23·58	24·09	25·63	23·58	24·09	23·58	23·58
1896*	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1897	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1898	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1899	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1900	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1901	26·25	24·15	24·68	26·25	24·15	24·68	24·68	24·15
1902‡	28·13	25·88	26·44	28·13	25·88	27·00	26·44	26·44
1903	28·13	25·88	26·44	28·13	25·88	27·00	26·44	26·44
1904	28·13	25·88	26·44	28·13	25·88	27·00	26·44	26·44
1905	28·13	25·88	26·44	28·13	25·88	27·00	26·44	26·44
1906	28·13	25·88	26·44	18·13	25·88	27·00	26·44	26·44
1907‡	31·25	28·75	29·37	31·25	28·75	30·00	29·37	29·37
1908	31·25	28·75	29·37	31·25	28·75	30·00	29·37	29·37
1909	31·25	28·75	29·37	31·25	28·75	30·00	29·37	29·37
1910	31·25	28·75	29·37	31·25	28·75	30·00	29·37	29·37
1911	31·25	28·75	29·37	31·25	28·75	30·00	29·37	29·37
1912‡	34·38	31·62	33·00	34·38	31·62	33·00	33·00	32·21
1913	34·38	31·62	33·00	34·38	31·62	33·00	33·00	32·21
1914	34·38	31·62	33·00	34·38	31·62	33·00	33·00	32·21

3. WEEKLY WAGES, 1904 TO 1913

	<i>Hanover</i>		<i>Danzig</i>	<i>Kiel</i>	<i>Luebeck</i>	<i>Munich</i>	<i>Neukoelln</i>	<i>Stettin</i>
<i>Year</i>	<i>Compositors</i>	<i>Printers</i>	<i>Compositors</i>		<i>Compositors</i>		<i>Compositors</i>	
1904	28·30	27·40	25·60	27·60	26·95	27·25	29·25	27·95
1905	28·40	28·10	25·60	28·80	26·20	27·05	31·00	27·90
1906	28·40	28·70	25·75	28·75	26·35	27·25	30·90	28·00
1907	30·60	30·10	28·25	29·95	28·60	29·55	32·45	28·25
1908	30·30	29·80	28·30	31·10	28·70	29·50	32·35	28·00
1909	30·40	29·50	28·80	31·40	29·70	29·50	32·50	27·45
1910	30·30	30·40	28·90	30·90	29·30	29·60	32·55	28·10
1911	30·40	31·00	29·15	30·55	30·05	30·05	32·95	28·40
1912	33·90	32·80	32·35	33·60	31·35	33·70	36·80	30·90
1913	33·60	33·20	32·35	34·15	31·20	32·90	36·35	30·50

\* From July 1st.

† From October 1st.

‡ From January 1st.

Wages for Wuerttemberg and Halle are taken from *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1873 and 1897; K. Strasburger, *Statistischer Beitrag zur Lehre vom Arbeitslohn*; Morgenstern, *Tarif und Lohn im deutschen Buchdruckgewerbe*; A. Gerstenberg, *Die neuere Entwicklung des deutschen Buchdruckgewerbes*.

Wages for the years 1830-1872: Rexhaeuser, *Zur Geschichte des Verbandes der Deutschen Buchdrucker*; Karl Engelbrecht, *50 Jahre Geschichte, Verein Leipziger Buchdrucker und Schriftgiesser-Gehilfen, 1862-1912*; Gauverein Wuerttemberg des Verbandes der Deutschen Buchdrucker, 1867-1907; *Der Verband der Deutschen Buchdrucker, 50 Jahre deutsche gewerkschaftliche Arbeit mit einer Vorgeschichte*, herausgegeben vom Vorstand des Verbandes der Deutschen Buchdrucker, Erster Band.

Wages for the years 1872-1914: collective agreements.

Wages for the years 1904-1913: see remarks on wages during this period in other occupations; all figures, with the exception

## VI. WAGES IN THE CHEMICAL INDUSTRY, 1884 TO 1913

Year	Stettin*	Wuerttemberg*	Baden†	Year	Stettin*	Baden†	Badische Anilin Factory*
1884	749	—	—	1900	1,046	—	1,215‡
1885	—	682	—	1901	1,058	—	1,195
1886	14·35†	697	—	1902	1,098	—	1,201
1887	867	716	—	1903	—	20·84	1,209
1888	877	743	—	1904	—	—	—
1889	813	795	—	1905	—	—	1,219
				1906	—	—	1,352
1890	1,013	749	18·27	1907	—	—	1,413
1891	1,012	763	—	1908	—	—	1,455
1892	1,010	776	—	1909	—	—	1,473
1893	917	768	—				
1894	1,017	778	—	1910	—	—	1,563
1895	1,000	781	—	1911	—	—	1,596
1896	1,003	805	18·93	1912	—	—	1,623
1897	1,021	—	—	1913	—	—	1,724
1898	18·25†	—	—				
1899	998	—	—				

\* Annual wages.

‡ The figure for 1899 is 1,194 marks.

† Weekly wages

of those for Hanover, are taken from an unpublished investigation by R. Kuczynski into actual wages earned.

Wages for the years 1884-1913: annual reports of the *Vorsteher der Kaufmannschaft Stettin*, wages paid in the Chemische Fabrik Pommerensdorf: *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1897; annual reports of the *Gewerbeaufsichtsbeamten und Bergbehoerden, Baden*, wages paid in five factories; annual reports of the *Badische Anilin- und Soda-Fabrik, Ludwigs-hafen*.

## VII. WAGES IN TRANSPORT

### 1. WAGES, 1874 TO 1894

Year	Berlin Drivers*	Reich Sailors†	Year	Berlin Drivers*	Reich Sailors†	Year	Berlin Drivers*	Reich Sailors†
1874	—	59·44	1881	18·00	43·13	1889	21·00	53·87
1875	—	56·36	1882	20·00	45·13			
1876	—	56·88	1883	20·00	47·74	1890	21·00	56·49
1877	—	56·85	1884	20·00	47·61	1891	20·00	56·81
1878	—	51·25	1885	20·00	46·63	1892	21·00	55·48
1879	18·00	43·63	1886	19·00	45·01	1893	21·00	53·70
			1887	19·00	44·30	1894	21·00	51·16
1880	18·00	43·00	1888	20·00	46·53			

### 2. WAGES, 1895 TO 1904

Year	Berlin Transport Workers*	Breslau Transport Workers*	Hamburg Transport Workers*	Leipzig Transport Workers*	Munich Transport Workers*	Berlin Drivers*	Nuremberg Drivers*	Prussia† Railwaymen	Reich§ Sailors	Reich‡ Sailors
1895	—	—	—	—	—	21·50	15·00	2·39	—	51·47
1896	—	—	—	—	—	22·00	15·00	2·41	—	51·74
1897	—	—	—	—	—	22·00	16·00	2·48	—	54·03
1897-1898	19·20	—	19·86	18·40	—	21·50	16·00	2·52	—	55·28
1898	—	—	—	—	—	21·00	16·00	2·55	864	56·52
1899	—	—	—	—	—	21·50	19·00	2·63	901	57·70
1899-1900	21·25	15·00	21·33	19·17	19·43	21·75	19·00	2·68	914	59·42
1900	—	—	—	—	—	22·00	19·00	2·72	926	61·13
1901	—	—	—	—	—	24·00	19·00	2·74	932	61·89
1901-1902	21·75	15·80	22·66	19·29	17·36	24·00	19·00	2·75	936	61·93
1902	—	—	—	—	—	24·00	19·00	2·76	939	61·96
1903	—	—	—	—	—	23·00	19·00	2·78	950	61·93
1903-1904	21·83	16·04	22·73	19·69	19·52	24·00	—	2·80	958	61·83
1904	—	—	—	—	—	25·00	—	2·82	966	61·74

\* Per week.

† Per day.

‡ Per month.

§ Per year.

|| Figures for 1893 and 1894 are 15·00 marks in each year.

3. WAGES, 1903 TO 1914				
Year	Reich* Transport Workers	Prussia† Railwaymen	Reich‡ Sailors	Reich§ Sailors
1903-1904	19·24	2·80	958	61·84
1905	—	2·89	990	61·95
1905-1906	20·75	2·97	1,022	62·87
1906	—	3·05	1,054	63·78
1907	22·14	3·18	1,100	67·21
1908	22·43	3·24	1,114	67·25
1909	22·68	3·29	1,138	66·74
1910	24·52	3·39	1,165	66·67
1911	24·35	3·51	1,209	69·01
1912	25·09	3·72	1,291	69·99
1913	25·31	3·82	1,330	71·76
1914	25·78	4·00	—	—

Other sources are: for the years 1830-1839, 1840-1849, 1850-1859, 1860-1865, 1865 and 1872, the *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, Jahrgang 1873 and 1897; for the years 1860 and 1864-1887 we find data for Chemnitz and surroundings in the annual reports of the Chamber of Commerce for Chemnitz; the annual reports of the *Vorsteher der Kaufmannschaft Stettin* give figures for the years 1869-1878 of wages paid in the Pommerensdorfer Siederei; in the American consular reports on the State of Labor in Europe, 1878, we find wage data for the years 1873-1878: I have found a reference to wage data for the years 1830-1870 as published in *Statistik des Hamburgischen Staats*, Heft VIII, 1876; unfortunately I was not able to verify it in this country.—

Wage data for transport workers are taken from R. Kuczynski, *Die Entwicklung der gewerblichen Loehne seit der Begrueundung des Deutschen Reichs*; annual year-book of the Deutsche Transportarbeiter-Verband, 1907-1915; reports of the conferences of the Deutsche Transportarbeiter-Verband, 1901-1907.

Wages paid in mercantile shipping, see *Statistisches Handbuch fuer das Deutsche Reich*, I. Band; *Statistisches Jahrbuch fuer das Deutsche Reich*, 1907-1915.

Wages on railways: *Statistisches Jahrbuch fuer den Preussischen Staat*, 1911-1915; *Reichseisenbahnamt, Statistik der im Betriebe befindlichen Eisenbahnen Deutschlands*, Band 19 to 34; from this publication we used the data on average wages (computed from total wage bill and number of workers employed) in the chief

\* Per week.

† Per day.

‡ Per year.

§ Per month.



sections of all railways for the years 1898-1903, 1912 and 1913; for the years 1904-1911 we used the average wages as computed by the *Transportarbeiter-Verband*, published in its year-book; wage data for workers in the railway repair shops of the Upper Silesian railway in the years 1870-1880, and of the Breslau-Schweidnitz-Freiburger Eisenbahn for the years 1867-1882, are given in M. Neefe, *Ermittlungen ueber die Lohnverhaeltnisse in Breslau*; for the railways in Wuerttemberg we have wage data since 1891, which, however, because of changes in the methods of computation, are not strictly comparable with each other; the wages of tramway workers in Wuerttemberg received, according to the *Wuerttembergische Jahrbuecher fuer Statistik und Landeskunde*, 1897, the following extraordinarily fluctuating annual wages in the years 1885-1896: 773, 438, 494, 463, 632, 595, 752, 621, 771, 670, 503, 433.

### VIII. WAGES OF MINERS

#### I. WAGES PER SHIFT, 1870 TO 1884

Year	Hard-Coal Mining		Iron Ore Mining	
	Saar	Aachen	Right Bank of the Rhine	Left
1870	2.50	3.00	—	—
1871	2.70	3.24	3.65	—
1872	3.18	3.18	3.72	3.18
1873	3.25	3.52	3.77	3.10
1874	3.32	3.48	3.43	3.00
1875	3.05	3.18	3.07	2.96
1876	2.83	2.86	2.54	2.90
1877	2.83	2.50	2.10	2.44
1878	2.93	2.35	2.15	2.25
1879	2.96	2.30	2.31	1.90
1880	3.03	2.55	2.29	2.25
1881	3.07	2.52	2.28	2.26
1882	3.16	2.48	2.30	2.29
1883	3.22	2.43	2.32	2.29
1884	3.21	2.42	2.30	2.25

#### 2. WAGES PER SHIFT IN HARD-COAL MINING, 1884 TO 1914

Year	Ruhr	Saar	Aachen	Silesia	
	Territory	District	District	Upper	Lower
1884	2.68	2.92	—	—	—
1885	2.66	2.88	—	—	—
1886	2.58	2.85	—	1.81	1.99
1887	2.57	2.87	—	1.82	2.14
1888	2.69	2.92	—	1.85	2.04
1889	3.05	3.24	2.72	2.03	2.23

2. WAGES PER SHIFT IN HARD-COAL MINING, 1884 TO 1914—*continued*

Year	<i>Ruhr</i>	<i>Saar</i>	<i>Aachen</i>	<i>Silesia</i>	
	<i>Territory</i>	<i>District</i>	<i>District</i>	<i>Upper</i>	<i>Lower</i>
1890	3·49	3·79	3·01	2·37	2·45
1891	3·54	3·89	3·10	2·46	2·50
1892	3·28	3·69	2·90	2·43	2·46
1893	3·14	3·37	2·81	2·42	2·42
1894	3·16	3·24	2·81	2·45	2·40
1895	3·18	3·27	2·85	2·46	2·43
1896	3·29	3·28	2·91	2·49	2·49
1897	3·57	3·34	3·12	2·58	2·59
1898	3·74	3·40	3·27	2·73	2·67
1899	3·96	3·46	3·45	2·87	2·80
1900	4·18	3·56	3·85	3·12	3·00
1901	4·07	3·54	3·78	3·10	2·92
1902	3·82	3·57	3·71	2·97	2·73
1903	3·88	3·60	3·79	2·98	2·75
1904	3·98	3·71	3·89	2·98	2·79
1905	4·03	3·80	4·08	3·08	2·94
1906	4·37	3·88	4·41	3·23	3·05
1907	4·87	4·02	4·64	3·48	3·27
1908	4·82	4·04	4·58	3·52	3·29
1909	4·49	3·96	4·45	3·48	3·23
1910	4·54	3·97	4·49	3·44	3·23
1911	4·69	4·06	4·59	3·48	3·30
1912	5·03	4·22	4·87	3·64	3·44
1912*	5·03	4·22	4·87	3·50	3·29
1913	5·36	4·45	4·89	3·63	3·43
1914	5·15	4·35	4·76	3·57	3·45

## 3. WAGES PER SHIFT IN SOFT-COAL, ORE AND SALT MINING, 1884 TO 1914

Year	<i>Soft-Coal</i>	<i>Copper</i>	<i>Iron Ore Mining</i>			<i>Salts</i>
	<i>Halle</i> <i>District</i>	<i>Halle</i> <i>District</i>	<i>Oberharz</i> <i>District</i>	<i>Siegen-</i> <i>Nassau</i> <i>District</i>	<i>Other Districts</i> <i>Right Left</i> <i>Bank of Rhine</i>	<i>Halle</i> <i>District</i>
1884	2·21†	2·71†	1·98	—	— —	3·05†
1885	2·24†	2·76†	1·99	—	— —	3·03†
1886	2·22†	2·42†	1·97	—	— —	3·02†
1887	2·13	2·42	1·98	—	— —	3·00
1888	2·23	2·66	1·99	—	— —	3·05
1889	2·33	2·87	2·14	2·36	2·11 2·18	3·17
1890	2·50	3·01	2·16	2·46	2·26 2·22	3·63
1891	2·55	3·16	2·20	2·33	2·30 2·25	3·48
1892	2·54	3·02	2·18	2·29	2·27 2·20	3·57
1893	2·49	2·63	2·09	2·23	2·22 2·15	3·45
1894	2·46	2·52	2·10	2·20	2·22 2·17	3·43
1895	2·50	2·61	2·09	2·20	2·25 2·15	3·41
1896	2·56	2·80	2·12	2·52	2·36 2·20	3·48

\* Changed method of computation.

† For the year ending September 30th.

3. WAGES PER SHIFT IN SOFT-COAL, ORE AND SALT MINING, 1884 TO 1914—*cont.*

Year	Soft-Coal†	Copper	Iron Ore Mining			Salts‡	
	Halle District	Halle District	Oberharz District	Siegen-Nassau District	Other Districts Right Bank of Rhine	Left	Halle District
1897	2·64	2·93	2·15	2·78	2·55	2·25	3·58
1898	2·74	3·05	2·22	2·89	2·72	2·38	3·59
1899	2·87	3·19	2·27	3·27	2·90	2·50	3·64
1900	3·06	3·36	2·31	3·47	3·08	2·53	3·77
1901	3·06	3·30	2·37	3·19	2·87	2·48	3·81
1902	2·94	2·84	2·32	2·84	2·70	2·39	3·58
1903	2·98	2·93	2·36	2·96	2·78	2·42	3·59
1904	3·05	3·08	2·39	2·97	2·83	2·49	3·59
1905	3·15	3·23	2·50	3·18	3·00	2·59	3·69
1906	3·35	3·42	2·63	3·71	3·38	2·76	3·78
1907	3·60	3·53	2·94	3·99	3·61	2·93	3·95
1908	3·59	3·36	3·14	3·59	3·32	2·97	3·93
1909	3·54	3·39	3·16	3·40	3·30	2·95	3·89
1910	3·57	3·53	3·19	3·54	3·39	3·00	3·98
1911	3·69	3·68	3·27	3·71	3·43	3·07	4·20
1912	3·78	3·82	3·45	3·96	3·67	3·18	4·34
1912*	3·68	3·66	3·45	3·96	3·68	3·18	4·19
1913	3·77	3·71	3·73	4·12	3·86	3·25	4·21
1914	3·73	3·66	3·67	3·99	3·90	3·27	4·16

Wages 1800–1884 see: M. Reuss, *Mitteilungen aus der Geschichte des Koeniglichen Oberbergamtes zu Dortmund und des Niederrheinisch-Westfaelischen Bergbaus*, *Zeitschrift fuer das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, Vol. 40; Huyssen, *Beitraege zur Kenntniss der Lage der Berg- und Huettenleute*, *Zeitschrift fuer das Berg-, Huetten- und Salinenwesen*, etc., Vol. 9; Hiltrop, *Beitraege zur Statistik des Oberbergamts-Bezirks Dortmund*, *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 1875; Hiltrop gives wages for more mines than I have quoted; further wage data can be found in E. Mueller, *Die Entwicklung der Arbeiterverhaeltnisse auf den staatlichen Steinkohlenbergwerken von 1816 bis 1903*, in *Der Steinkohlenbergbau des Preussischen Staats in der Umgebung von Saarbruecken*; *Mitteilungen ueber den Niederrheinisch-Westfaelischen Stein-*

\* Changed method of computation.

† Wage data for the Left Rhine Bank district are available since 1903; they are: 1903, 3·20; 1904, 3·25; 1905, 3·38; 1906, 3·70; 1907, 3·93; 1908, 4·00; 1909, 3·95; 1910, 3·92; 1911, 3·99; 1912, 4·10; 1913, 4·24; 1914, 4·22.

‡ Wage data for the Clausthal district are available since 1905; they are: 1905, 3·69; 1906, 3·86; 1907, 4·09; 1908, 4·06; 1909, 4·03; 1910, 4·09; 1911, 4·29—1912, 4·42; 1912\*, 4·34; 1913, 4·36; 1914, 4·34.

kohlenbergbau, edited by the Verein fuer die Bergbaulichen Interessen im O.B.B. Dortmund zu Essen; *Die Entwicklung des Niederrheinisch-Westfaelischen Steinkohlen-Bergbaus in der Zweiten Haelfte des 19. Jahrhunderts*, Vol. XII, Part 3; A. V. Waldthausen, *Geschichte des Steinkohlenbergwerks Ver. Saelzer & Neuack, Essen*, 1902 wages of miners in Saxony are given for the years 1869-1885, in the *Zeitschrift des Koeniglich Saechsischen Statistischen Bureaus*, 1885; Frief, *Die wirtschaftliche Lage der Fabrikarbeiter in Schlesien und die zum Besten derselben bestehenden Einrichtungen*, Breslau, 1876, gives wages of iron ore miners for the years 1870-1875.

Wages for the years 1884-1914 are taken from the *Zeitschrift fuer das Berg-, Huetten- und Salinenwesen im Preussischen Staate*, and from the *Statistisches Jahrbuch fuer das Deutsche Reich*; shift wages for the miners in Alsace-Lorraine are to be found in the *Statistisches Jahrbuch fuer Elsass-Lothringen* and in the annual reports of the factory and mine inspectors for Alsace-Lorraine. Data for non-Prussian mines, especially in Saxony, Bavaria and Sachsen-Altenberg (soft-coal) are not always comparable and have been left out of account since they would not markedly influence our index of wages; data on wages are also available for the Roechling'sche Eisen- und Stahlwerke as paid per year to iron ore miners.

\* \* \*

For industries not covered by our wage survey wage data should be mentioned for the porcelain industry in Saxony; see *Zeitschrift des Koeniglich Saechsischen Statistischen Bureaus*, 1885, and wages of cigar makers quoted in the same *Zeitschrift*, 1892.

\* \* \*

The wages of agricultural workers were computed and estimated on the basis of the following sources: Anna Neumann, *Die Bewegung der Loehne der laendlichen "freien" Arbeiter im Koenigreich Preussen vom Ausgang des 18. Jahrhunderts bis 1850*; Th. v. d. Goltz, *Die Lage der laendlichen Arbeiter im Deutschen Reich*; Ph. A. Meitzen, *Der Boden und die landwirtschaftlichen Verhaeltnisse des Preussischen Staats*; Udo Eggert, *Die Bewegung der Holzpreise und Tagelohnsaetze in den preussischen Staatsforsten von 1800 bis 1879*, *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 1883; Paul Schuetze, *Studien ueber die Entwicklung der Lohnverhaeltnisse laendlicher Arbeiter in Norddeutschland seit 1870*; W. Asmis, *Zur*

*Entwicklung der Landarbeiterloehne in Preussen, Landwirtschaftliche Jahrbuecher*, Vol. LII, Heft 4, 1919; W. Klatt, *Geschichtliche Entwicklung der Landarbeiterverhaeltnisse in Ostpreussen*; W. Hucho, *Die Naturalentlohnung in der deutschen Landwirtschaft; Festschrift zur 50 jaehrigen Jubelfeier des Provinziallandwirtschaftlichen Vereins zu Bremervoerde*; A. Frege, *Zur Lohnbewegung der letzten 100 Jahre*.

\* \* \*

Net wages were computed by deducting from gross wages losses through unemployment, illness, taxes, social insurance contributions and trade union dues, and adding the social insurance benefits. The individual items were computed as follows:

Unemployment, 1887-1903, estimates on the basis of the official reports on the labour market, especially also the reports of health and accident insurance; short-time could not be taken into account; 1903-1914, trade union statistics.

Illness, 1887-1914, computed on the basis of the official statistics of days lost through illness per insured member, as published in the *Statistisches Jahrbuch fuer das Deutsche Reich*.

All other items, my estimates.

\* \* \*

Relative wages were computed as follows:

Industrial production, see the study by Wagenfuehr, mentioned above.

Agricultural production, figures refer to grain production only and are computed from the material contained in Hans Wolfram Graf Finck von Finckenstein, *Die Getreidewirtschaft Preussens von 1800 bis 1930*, published by the Institut fuer Konjunkturforschung, and the official cultivation statistics.

Industrial and agricultural production combined according to the estimated value of each; these value estimates are given in the *Konjunkturstatistisches Handbuch*, 1933.

Wholesale Prices, see Alfred Jacobs and Hans Richter, *Die Grosshandelspreise in Deutschland von 1792 bis 1934*, published by the Institut fuer Konjunkturforschung.

For wages, see above; and for cost of living, see below.

For population, see official figures in the *Statistisches Jahrbuch fuer das Deutsche Reich*,



## II. COST-OF-LIVING DATA AND THEIR SOURCES

The cost of living index is composed of an index of the cost of food and one of the cost of housing.

The cost of food during the years under review developed as follows:

## COST OF FOOD, 1870 TO 1914

(1900 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1870	92	1880	105	1890	101	1900	100	1910	119
1871	99	1881	106	1891	104	1901	101	1911	123
1872	103	1882	103	1892	103	1902	102	1912	131
1873	112	1883	102	1893	100	1903	101	1913	131
1874	116	1884	96	1894	98	1904	101	1914*	128
1875	103	1885	93	1895	96	1905	106		
1876	106	1886	90	1896	95	1906	112		
1877	108	1887	90	1897	97	1907	113		
1878	101	1888	91	1898	100	1908	113		
1879	98	1889	97	1899	100	1909	116		

Rents have developed as follows:

## RENT, 1820 TO 1914

(1900 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1820-1829	27	1887	87	1894	90	1901	101	1909	121
1830-1839	34	1888	88	1895	91	1902	103		
1840-1849	38	1889	89	1896	92	1903	105	1910	124
1844-1852	38			1897	94	1904	107	1911	126
1852-1859	42	1890	89	1898	96	1905	110	1912	128
1860-1867	52	1891	89	1899	99	1906	114	1913	129
1868-1878	71	1892	89			1907	116	1914*	130
1879-1886	84	1893	89	1900	100	1908	118		

As will be obvious from the following remarks, the index of rent is considerably less reliable than that of the cost of food.

The index of the cost of food is computed as follows: a cost-of-food index was computed for Prussia (1820-1890), Munich (1821-1890), and Darmstadt (1835-1890). The index for Prussia is based on the following data and sources: wholesale prices of wheat, rye, yellow split peas and potatoes, 1820-1873; retail prices of meat (beef and pork) and butter, 1820-1873; weights: 1820-1850, wheat, 2; rye, 3; beef, 2; pork, 2; potatoes, 1; butter,  $1\frac{1}{2}$ ; and peas,  $\frac{1}{2}$ ; 1850-1873, pork  $2\frac{1}{2}$  and beef  $1\frac{1}{2}$ , all

\* First half of year.

other items remaining unchanged; for the years from 1873-1890, the index is based on the retail prices of wheat and rye flour, beef and pork, butter, eggs, Java rice and Java coffee, and the wholesale price of potatoes; weights: wheat flour, 2; rye flour, 3; beef, 1; pork, 2; potatoes, 1; butter,  $1\frac{1}{2}$ ; eggs, coffee and rice, each  $\frac{1}{2}$ ; the source for these price data is *Zeitschrift des Preussischen Statistischen Landesamts*, Jahrgang 1907. The price data for the Munich index were taken from *Mitteilungen des Statistischen Amtes der Stadt Muenchen*, XI. Band, 1894; they refer to the retail prices of butter, eggs, beef (Ochsenfleisch), pork, wheat and rye bread, potatoes, milk, summer and winter beer, weighted as follows: 2,  $1\frac{1}{2}$ , 6, 6, 4, 3, 1, 7, 4, 2. The data for Darmstadt were taken from Fritz Kattwinkel, *Die Geschichte der Tagelohnne im Grossherzogtum Hessen von den 1830er Jahren bis 1905*; they refer to beef (Ochsenfleisch), pork, bread, beer (Lagerbier), potatoes (1836-1846 Mayence and 1878-1890 for the whole of Hessia), and are weighted as follows: 1835-1850, 2, 2, 5, 1, 1, and 1850-1890,  $1\frac{1}{2}$ ,  $2\frac{1}{2}$ , 5, 1, 1. The three indices for Prussia, Munich and Darmstadt were combined into one index with the following weights: Prussia 10, Munich 1, and Darmstadt 1.

For the years 1890-1911, the index was computed on the basis of the cost of food for Luebeck, Magdeburg, Mannheim and Stuttgart (*Schriften des Vereins fuer Sozialpolitik, Kosten der Lebenshaltung in deutschen Grosstaedten*), Bavaria, Brunswick and Luebeck (*Bulletin de l'Institut International de Statistique*, Tome XIX), Ruhr territory (*Jahresbericht der Handelskammer Essen*, 1910), Berlin (*Gustav Brutzer, Die Verteuerung der Lebensmittel in Berlin im Laufe der letzten 30 Jahre*), Mannheim (*Verwaltungs- und Rechenschaftsbericht der Stadt Mannheim fuer 1912*); the indices for each town, for the Ruhr territory and for Bavaria, were combined, without weighting them, into a general index. For the years 1911-1914, first half, I used the computations of Calver in the journal, *Konjunktur*.

The index of rents was computed or estimated on the basis of data for the following years and towns: 1820-1850, Berlin; 1850-1870, Berlin and Halle; 1870-1880, Berlin, Halle, Hamburg and Leipzig; 1880, same cities with the addition of Breslau and Dresden; 1885, same cities as 1880 and Magdeburg; 1890

same cities as 1885 without Dresden; 1890-1914 computed or estimated on the basis of data for the following cities: Barmen, Berlin, Breslau, Chemnitz, Halle, Hamburg, Jena, Leipzig, Luebeck, Magdeburg, Strassburg and Stuttgart; for most of these cities rent data were not available for a series of consecutive years, but only at intervals, which differed from city to city. The statistical sources for the rent data for the years 1820-1914 are: *Kosten der Lebenshaltung in Deutschen Grosstaedten*; *Neue Untersuchungen ueber die Wohnungsfrage in Deutschland und im Ausland*; *Die Wohnungsnot der aermere Klassen in deutschen Grosstaedten*; published by the Verein fuer Sozialpolitik; E. Engel, *Die Wohnungsnot*, *Zeitschrift des Koeniglich Preussischen Statistischen Bureaus*, 1872; Carl Hampke, *Das Ausgabebudget der Privatwirtschaften*; Duncker and A. Rutenberg, two articles in the *Monatsschrift fuer Deutsches Staedte- und Gemeindewesen*, 1857; *Monatsberichte des Statistischen Amts der Stadt Chemnitz*, 1928; Walter Voigt, *Die Loehne in den Stiftungsbetrieben von Carl Zeiss und Schott & Gen.*

The indices for food costs and rents were weighted as 3 to 1 when combined into a general index of the cost of living.

## CHAPTER IV

# LABOUR UNDER DECAYING CAPITALISM, 1914 TO THE PRESENT DAY

### I. THE ECONOMIC BACKGROUND

THE period from 1914 to the present day has been the most disastrous in the history of the German people. It began with a war in which many millions were killed and maimed, and the standard of living of those who survived was lowered with a rapidity unequalled since the dark days of 1807 and 1847.

Four years of war were followed by five years of further economic disintegration, chiefly through the development of the most fantastic monetary inflation known in the history of this device so often used to cheat the creditors and the poor.

These nine years were followed by not quite six years in which labour conditions improved in certain respects while they deteriorated in others, but which on the whole brought an upswing of trade activity and an improvement in labour conditions generally.

But even before these six years were finished, the worst crisis known under capitalism broke over Germany, and production and trade declined with unprecedented rapidity. This crisis lasted somewhat more than three years, when finally the most terrible of all plagues hit this unfortunate country: Fascism and another war.

A story, truly terrible because of the misery it caused to the German people and finally to the world. Terrible also because so much of this misfortune is due to the incapacity of the German people to take its fate into its own hands.

Let us repeat this story with the years each phase comprises:

August 1914 to November 1918—war;

November 1918 to November 1923—peace and inflation;

December 1923 to October 1929—relative improvement;

October 1929 to January 1933—crisis and depression;

January 1933 to the present day—Fascism and war.

There is another and impressive way to tell the story: simply by giving an index of the development of industrial production during these years.\*

### INDEX OF INDUSTRIAL PRODUCTION, 1913 TO 1938

(1928 = 100; *Current Reichs-Territory*)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1913	98	1919	37	1924	69	1930	87	1933	66
1914	81	1920	54	1925	83	1931	70	1934	83
1915	66	1921	65	1926	76	1932	58	1935	95
1916	63	1922	70	1927	96			1936	108
1917	61	1923	46	1928	100			1937	118
1918	56			1929	100			1938	126

The war of 1914-1918 hastened the process of concentration and monopolization in German industry. The period of inflation drove thousands of small industrial and retail establishments into bankruptcy and furthered the creation of gigantic trusts. The period of relative stabilization, 1924-1929, can also be characterized as the period of rationalization and of strongest pressure upon the medium and small employers; it also brought into being the biggest German steel trust, the United Steel Works, and the world's biggest chemical trust, the I.G. Farben trust. The period of the crisis of 1929-1932 not only drove out of existence yet more thousands of small establishments but it also strengthened the position of a number of monopolies and led to further concentration of capital, especially in banking. And finally, Fascism is the paradise of monopoly and hell for the small man.

Whatever happened, therefore, the position of the monopolies was strengthened. In fact, one can say that each phase seemed to be especially designed to favour the monopolies. Or, rather, each phase was designed by the monopolists to strengthen their position.

Who was responsible, on the German side, for the war of 1914-1918? The imperialist monopolies which desired the world as material for exploitation! Who engineered the inflation so that very quickly, indeed, it became a convenient means of plunder in the hands of the big employers at the head of whom stood Stinnes, the chief "industrial empire builder"? The monopolies which sought yet higher extra-profits! Who rational-

\* The index is the one computed by the Institut of Konjunkturforschung.



ized German industry, brought it to the highest pitch of technical efficiency, and at the same time made of it an instrument of intense exploitation? Not the small and medium employers, but the big trusts—with the help of international finance capital! Who weathered the crisis while thousands fell, and came out of it technically better equipped than when they entered it? Again the large establishments, the trusts and monopolies! Who has flourished under Fascism, whom does Fascism represent, and who represents Fascism, which has worked for this war in order to realize the dreams of 1914? Again, the trusts, cartels and monopolies!

One can say, therefore, that, during the whole period under review, the interests of the monopolies dominated German economic and political development. Not that the monopolies were dominant in every single year and in every aspect. But over the period as a whole, and during each of its phases, it was the monopolies which shaped the destiny of Germany.

It is of interest to follow the growing dominance of monopolies with all that this implies in two specific economic fields: the development of production, and the development of prices. We know that monopolies have a restrictive influence on production and a "stabilizing influence" on prices, that is, they succeed to some degree in keeping in check downward fluctuations of prices and upward fluctuations of production.

Let us study first the development of production.

#### INDUSTRIAL PRODUCTION BY TRADE CYCLES

(1929 = 100; *Current Territory*)

<i>Trade Cycle</i>	<i>Index</i>
1887-1894	39
1894-1902	57
1903-1909	78
1909-1913	91
1909-1913*	82
1914-1923	60
1924-1932	82

The table shows clearly that production had a tendency to increase to a smaller degree with every new "normal trade cycle," that is, leaving out of account the years from 1914-1923, and the years from 1933 to the present day. In fact, the

\* Post-war Territory.

first post-war cycle shows a decline in production as compared with the last pre-war cycles; but this is due to a decrease in the size of the country covered, Germany having lost part of its industry after 1918. But even taking this into account, it is probable that the rate of increase per head from pre-war years to 1924-1932 was around zero. The restrictive influence of monopolies on production has had a very considerable effect on German production. This is especially obvious also when we study the development of production during the trade cycle.\* Production from one cycle peak to another tended to increase less; it tended to decline more during the crisis—while prices were kept as high as possible; and from the lowest point during the crisis to the highest point during the phase of increasing trade activity it rose much more than formerly—because of the very pronounced decline during the crisis.

#### PRODUCTION AT VARIOUS TRADE CYCLE PEAKS

(1928 = 100)	
<i>Cycle Peak</i>	<i>Total Production</i>
1891	40
1900	63
1906	83
1913	98
1913†	89
1929	100

While there has been nothing like negative accumulation, while the post-war peak of production‡ was still definitely higher than that of the best pre-war years, § the rate of increase has diminished extraordinarily. The increase between 1891 and 1900 is typical for the increase from one trade peak to another in the nineteenth century; it is still little influenced by the restrictive forces of monopoly. During the pre-1914-1918-war years of the twentieth century the restrictive influence of monopoly is still relatively small, although it becomes noticeable, especially in individual industries. But with the outbreak of the

\* Cf. on these problems also some statistics I gave in *Löhne und Konjunktur in Deutschland, 1887-1932*, and in *Weltproduktion und Welthandel in den letzten 100 Jahren*.

† Post-war territory.

‡ Excluding the peak under Fascism.

§ Although the average over the whole cycle was not higher!

war of 1914-1918 the powerful influence of monopoly practices upon the development of production becomes obvious.

#### PRODUCTION AT VARIOUS TRADE CYCLE LOW POINTS

<i>Trade Cycle Low Point</i>	<i>Total Production</i>
1892	39
1900	63
1908	77
1923	46
1932	58

If we compare the figures on this table with those on the previous one the results are surprising. There is almost no difference between the production figures in the year of highest production in the trade cycle 1887 to 1894 and those of the crisis following it. In the following trade cycle there is not even a difference in the year; the years of highest and lowest production are really the same, and during the depression period production continued to increase; in fact during this cycle there were only years of very small increase and of more considerable increase, but there was no year in which production, on the average, declined. This is not at all unusual; in fact during the trade cycles in the nineteenth century, production over the year as a whole (leaving individual months out of account) showed not rarely a continued increase of total production in industry over the whole trade cycle including the crisis. The decline between 1906 and 1908 of about 7 per cent is absolutely unique for the whole history of industrial production for which we have reliable annual data (that is since 1860). The decline during the war and the inflation crisis is out of proportion to everything ever believed possible, but it is, of course, not due solely to the factors normally determining the trend of production in a trade cycle in any phase of capitalism. The decline in 1930-1932, however, is "pure and simple" trade cycle decline and, therefore, even if not quite as large as in 1923, of much more significance. It shows the enormous effects of monopoly capitalism on the development of production, the much more rapid fall than in former times during the crisis—and to this corresponds a much more rapid increase from the depth of the crisis to the peak of production.

Between 1892 and 1900, production increased by roughly 60

per cent; between 1900 and 1906, it increased by roughly one-third; between 1908 and 1913 it rose by about 30 per cent. But, between 1923 and 1929, it rose by almost 120 per cent, and between 1932 and 1939 the increase was even somewhat higher. In the production goods industries the fluctuations were even wilder under monopoly capitalism, pig iron production, for instance, rising between 1923 and 1929 by over 500 per cent.

How different the development of prices! Instead of wild fluctuations we find that monopoly prices under monopoly capitalism—except for the period of inflation—show a tendency to remain almost stable, while other prices fluctuate very considerably.

#### RAW MATERIAL WHOLESALE PRICES IN GERMANY\*

<i>Year</i>	<i>Monopoly Determined</i>	<i>Competition Determined</i>
1925	101	113
1926	98	97
1927	99	97
1928	100	100
1929	104	93
1930	101	75
1931	90	57
1932	80	47

The much greater tendency towards stability of monopoly determined prices, especially during the crisis, is so obvious from the above table that no further comment is needed. But it might be useful to show the movement of prices and production in two individual, and in this respect typical, industries. Let us first study the monopolized iron industry.

#### PRICES AND PRODUCTION IN THE IRON INDUSTRY\*

(1928 = 100)

<i>Year</i>	<i>Prices</i>	<i>Production</i>
1925	101	88
1926	97	87
1927	98	112
1928	100	100
1929	102	110
1930	99	80
1931	89	57
1932	81	39

The policy of the monopoly becomes very obvious from this

\* See *Konjunktur-Statistisches Handbuch*, 1936.

table, to keep prices as high as possible—and how successful they were!—and rather to cut down production which they did, until in 1932 it was only about one-third of what it had been in 1929.

Let us compare this development with that in another industry which is not dominated by monopoly policies, although, as is natural in the present phase of capitalism, it comprises big concerns.

#### PRICES AND PRODUCTION IN THE TEXTILE INDUSTRY\*

(1928 = 100)

<i>Year</i>	<i>Prices</i>	<i>Production</i>
1925	120	90
1926	94	83
1927	96	109
1928	100	100
1929	88	92
1930	66	90
1931	48	88
1932	39	80

This table looks rather the same as the one above, except that the headings seem to be exchanged. Both of the tables are significant of the development of economic conditions under monopoly capitalism. True, the table of the iron industry shows the positive influences of monopoly; the restrictive and destructive influence upon production and the grip upon prices. But the textile industry shows the negative side of monopolist influence. For if prices are kept stable in monopolist industries, prices in non-monopolist industries fluctuate all the more and are driven down deeply during the crisis as production does not decline so much.† At the same time, since the importance of the monopolist industries is very great, such factors as unemployment are much more influenced by the development in heavy industry than by the relatively much smaller decline of production in consumption goods industries.‡ And the general development of prices and

\* *Ibid.*

† This description here is a very simplified one. On the basis of the laws of value, profit and prices, as developed by Marx, it is possible to give a complete explanation and description of the development of prices and production in various industries and in industry as a whole under monopoly capitalism. But such a description would go far beyond the limits of this short background introduction.

‡ Again a very simplified description.



the cost of living are also more strongly influenced by what is happening in the monopolized industries than by such branches of national economy as agriculture.

The growth of Fascism,\* again, has somewhat changed the general economic development. During the whole period of Fascism, production has grown continuously, and when the time for an economic crisis arrived, Fascism delayed no longer, and started the war.

During the period of increasing trade activity, prices were kept relatively stable with a slight tendency to increase. Production in heavy industry (armaments!) rose rapidly while that in the consumption goods industries increased very slightly. The weight of monopolist industries under Fascism has increased very much; they actually dominate the whole of the national economy. Every economic activity receives its direction and impetus from the monopolists. While it is not possible for Fascism to change the fundamental laws of capitalist economy, it is possible to make them work in such a way that the monopolists are more favoured than other sections of national economy. For example, even under Fascism the total sum of profits can be raised only from the sources active before Fascism came to power. But the rate of exploitation can be increased, and of the profits accruing the monopolies can grasp a larger share for themselves than before.

Labour conditions under monopoly capitalism can be studied most easily in Germany. Everything there appears in a terribly enhanced form, and the lot of the workers under monopoly capitalism everywhere—in France or Britain, the United States of America or Italy—is magnified to an almost unbelievable extent in the history of the German workers since 1914.

## 2. THE WAR YEARS 1914 TO 1918

Labour conditions usually deteriorate during a war under monopoly capitalism. The economic effort which war requires to-day, the great amount of man-power and raw materials diverted to the production of armaments, the large number of

\* For a more detailed history of the development of national economy under Fascism see Part 2 of this Volume, published under the title *A Short History of Labour Conditions in Germany under Fascism, 1933 to the Present Day*.

men and women serving in the armed forces, have a heavily depressing effect upon the production of goods for civilian consumption. Rationing measures, increased hours of work, intensification of the working process, an increase in accidents, a certain disintegration of national economy and such surface symptoms as the black market, all these and other factors tend to lower living and working standards.

Within a very short time after the outbreak of war, conditions in Germany had become such that the standard of living of the workers was lowered by 10 to 20 per cent.

Unemployment rose rapidly:

#### UNEMPLOYMENT AMONG TRADE UNION MEMBERS

JUNE, 1914, TO MAY, 1915

June, 1914	2.5	September	15.7	December, 1914	7.2	March	3.3
July	2.9	October	10.9	January, 1915	6.5	April	2.9
August	22.4	November	8.2	February	5.1	May	2.9

Within one month unemployment had increased by almost ten times over the last month of peace, and it took almost a year until unemployment had become "normal" again.

At the same time prices of some commodities rose rapidly. There was hoarding and, though there was no general scarcity, the cost of living rose. While during the first few months of the war this rise was a panic one, in the following months it was based on a real shortage combined with inflationary factors. According to the computations of Quante, food costs rose as follows:\*

#### WORKERS' MONTHLY FOOD COSTS PER HEAD, 1914 AND 1915

(In Marks)

<i>Month and Year</i>	<i>Berlin</i>	<i>Danzig</i>	<i>Province of Saxony</i>	<i>Rhine Province</i>
July, 1914	23.45	21.95	24.30	25.78
January, 1915	27.80	27.10	27.23	30.00
July, 1915	39.83	33.23	38.60	41.13

Within half a year food costs had increased by about 20 per cent, and, after a year of war, they had risen by more than 50 per cent.

At the same time no general provision was at first made for

\* See footnote, p. 215.

support of those families whose husbands or sons had gone to war.

Wages in some cases at first increased very slightly; often they declined, and this decline was so considerable that, even after eight months of war, daily wages in some industries had not yet regained the pre-war level.\*

DAILY WAGES FROM MARCH, 1914, TO MARCH, 1915

Industry	(In marks)					
	Men			Women		
	March 1914	September 1914	March 1915	March 1914	September 1914	March 1915
Printing .. ..	6·65	5·95	6·74	2·56	2·30	2·29
Food Industry ..	5·69	5·78	5·94	2·10	1·89	2·09
Metal Industry ..	5·54	5·67	6·29	2·05	1·66	2·22
Machine Building ..	5·32	5·22	6·41	2·28	1·96	2·87
Chemical Industry ..	5·16	4·97	5·37	2·36	1·92	2·35
Leather and Rubber ..	5·07	4·45	4·94	2·82	2·37	2·49
Electro Industry ..	4·52	4·02	4·99	2·75	2·09	3·01
Woodworking Industry ..	4·22	4·30	4·56	1·99	1·78	2·31
Clothing Industry ..	3·79	2·72	3·58	2·25	1·50	2·14
Textile Industry ..	3·64	3·19	3·67	2·30	2·05	2·22

As is obvious from this table, the development of wages was especially unfavourable for women. And although these data are sometimes based on scanty material, they are reliable enough to confirm the conclusion that wages during the first year of the war developed very unfavourably, and purchasing power declined rapidly.

During the following war-years conditions improved in some respects but in others they deteriorated so much that, on the whole, the standard of living of the German worker declined almost continuously, until in 1918 it reached the lowest stage for many a generation; it was probably even below that of the "hungry forties" and the years following the lost war in 1807. Furthermore, the number of people suffering from this low standard was much greater than seventy and one hundred and ten years earlier.

The only factor showing a favourable development was that of security of work. Practically every worker was sure to find employment, and unemployment statistics show that, apart from that connected with the mobility of labour, there was no unemployment.

\* Cf. *Reichsarbeitsblatt*, 1919, No. 8, and 1920, No. 1.

## UNEMPLOYMENT AMONG TRADE UNIONISTS,

1914 TO 1918	
Year	Percentage
July, 1914	2·9
1914	7·2
1915	3·2
1916	2·2
1917	1·0
1918*	0·8

The considerable unemployment of the first war year was followed by a labour shortage. Women, juveniles and old people were employed wherever possible.

In sharp contrast to this development—which secured at least some wages to everybody—the cost of living rose while less and less food was available for the workers. No reliable price statistics are available, but the computations by Calver, Guenther and Quante give a rough picture of the development of food costs:

## THE COST OF FOOD IN APRIL—1914 TO 1918†

(April, 1914 = 100)

April	Calver	Guenther	Quante‡	Quante§
1914	100	100	100	100
1915	138	139	138¶	145¶
1916	207	182	176	197
1917	220	188	188**	204
1918	229	210††	219	241
1918‡‡	248	222	248	278

The chief rise in the cost of food took place between 1914 and 1916. By the spring of 1916 food prices had risen by roughly 100 per cent. During the following two and a half years they continued to rise but at a very much slower pace; by the end of the war they had risen by probably 150 per cent as compared with pre-war levels.

\* January to October.

† Sources: Calver, *Monatliche Übersichten über Lebensmittelpreise*; Guenther, A., *Kriegslöhne und Preise und ihr Einfluss auf Kaufkraft und Lebenshaltung* and Waldemar Zimmermann, *Die Veränderungen der Einkommens- und Lebensverhältnisse der deutschen Arbeiter durch den Krieg*, Veröffentlichungen der Carnegie-Stiftung für Internationalen Frieden, Abteilung für Volkswirtschaft und Geschichte, Deutsche Serie; P. Quante, *Lohnpolitik und Lohnentwicklung im Kriege*, Zeitschrift des Preussischen Statistischen Landesamts, 59. Jahrgang, 1919.

‡ Rhine Province.

§ Berlin.

|| July, 1914.

¶ Average January and July, 1915.

\*\* Assuming that 43·37 is a misprint for 48·37.

†† February.

‡‡ October.

But while it seems that the government began, in the course of the war, to exercise a certain control on the development of prices, this table leaves out of account three important factors: the development of an increasing black market with very much higher prices; the growing scarcity of food which compelled people to buy more and more goods at uncontrolled prices; and finally the rapid deterioration in the quality of goods they were able to buy.

If we compute, therefore, an approximate index of real wages, this will show conditions as materially better than they actually were, especially during the last two years of the war period.

The above table indicates that the most varied computations lead on the whole to indices of prices not very different from each other. Calver assumes as a typical ration the amount of food consumed by a German marine; as in the course of the war neither the quantity nor certain commodities were any longer available, this is considerably removed from reality. The computations by Guenther are based on the special rations given to very heavy workers. Quante's computations include a considerable amount of estimates and are based on the pre-war consumption of metal workers, lower income class families and adult persons generally. To these estimates, because they are not much more, must be added a cost-of-living index computed by the Statistisches Reichsamt in 1923, based to a large extent on the computations of Calver, which runs as follows:\*

#### COST OF LIVING, 1913 TO 1918

(1900 = 100)

<i>Year</i>	<i>Index</i>
1913	130
1914	134
1915	168
1916	221
1917	329
1918	407

I shall use this index in the following computations of real wages.

As to the development of wages we have at our disposal the above quoted data on wages in various industries and their

\* Computed from table 1, p. 40, *Zahlen zur Geldentwertung in Deutschland 1914 bis 1923, Sonderhefte zu Wirtschaft und Statistik*, 5. Jahrgang, Sonderheft 1.



continuation up to September, 1918, in the *Reichsarbeitsblatt*. The Central Statistical Office also published an index of average wages for March and September of each year from 1914 to 1918; but it suffers from the fact that the basic sample of wage data given in the *Reichsarbeitsblatt* is overweighted by war-industries. I have therefore corrected this index according to the number of workers actually employed and the changing proportion of the sexes engaged, and have assumed that an average of the March and September figure gives an indication of the wage for the year as a whole. The following two tables give the development of gross wages by industries and for industry as a whole:

AVERAGE GROSS MONEY WAGES IN INDIVIDUAL  
INDUSTRIES, 1914 TO 1918  
(1900 = 100)

Year	Build- ing*	Metal†	Textiles	Wood- working	Printing	Chem- icals	Trans- port‡	Mining§
1914	142	123**	124	140	129	146**	145	122
1914¶	142	121	110	141	115	136	145	122
1915	143	150	125	153	132	161	151	135
1916	159	185	131	178	147	199	177	159
1917	206	258	160	235	178	272	261	196
1918	249	310	217	304	222	352	426	251

AVERAGE GROSS MONEY WAGES, 1914 TO 1918‡‡  
(1900 = 100)

Year	Index
1914**	132††
1914¶	125
1915	147
1916	172
1917	230
1918	292

\* Hourly wages of masons in Berlin, Hamburg and Stettin, April, 1914; April, 1915; May and September, 1916; May and December, 1917; April and October, 1918.

† Excluding machine building.

‡ Wages of skilled and unskilled Reichs-railway workers, yearly averages; cf. *Zahlen zur Geldentwertung*, I.c.

§ Annual average of shift wages of miners in Ruhr, hard-coal, and Halle, soft-coal mines; figures for 1914 refer to first and second half year.

|| First half year and March regarded as identical. ¶ September, 1914.

\*\* Assuming the wage for 1913 and in the first half of 1914 as the same.

†† Wages in factories, mines, transport and agriculture; figures for 1914, second half, and for 1915 to 1918 do not include agriculture.

‡‡ This average comprises in addition to the above the following industries: food, machine building, leather, rubber, electro, stone, pottery, paper and clothing.

Wages in individual industries fluctuated extraordinarily. They increased materially in all industries but the increase in some industries was two, and sometimes three, times as high as in others. The industries with the highest wage increases are usually those of the greatest importance in the war effort. The textile, printing and building industries show a relatively small increase, while in the metal, transport and chemical industries the increase is relatively high. But whatever the increase, there is not a single industry in which real wages were higher in 1918 than in 1914. The following table gives an approximation of an average real wage index :

GROSS REAL WAGES, 1914 TO 1918

(1900 = 100)

<i>Year</i>	<i>Index</i>
1914	96
1915	87
1916	78
1917	70
1918	72

As indicated, these figures are only very rough approximations. On the one hand, the wage index does not take into account over-time work ; on the other hand, the cost-of-living index does not take into account numerous factors making for a lowering of the real wage. It would be wrong, for instance, to conclude from the above table that real wages have increased from 1917 to 1918, nor would it be correct to claim that real wages in 1917 were 30 per cent lower than in 1900. The only conclusion one can draw with certainty from the above table is that real wages have declined considerably during the war, but that, during the last years of the war, this decline was somewhat slowed down.

While the above table undoubtedly does not show all of the decline in the standard of living of the workers, the following table, equally interesting, exaggerates it, as it refers only to foodstuffs, and the foodstuffs situation was, with the exception, perhaps, of clothing, the worst feature.

## FOOD RATIONS IN PER CENT OF PEACE-TIME CONSUMPTION,

1916-1918\*

Commodity				July 1, 1916, to June 30, 1917	July 1, 1917, to June 30, 1918	July 1, to De- cember 28, 1918
Meats	..	..	..	31	20	12
Fish	..	..	..	51	?	5
Eggs	..	..	..	18	13	13
Lard	..	..	..	14	11	7
Butter	..	..	..	22	21	28
Cheese	..	..	..	3	4	15
Rice	..	..	..	4	—	—
Cereals	..	..	..	14	1	7
Sugar	..	..	..	49	61	82
Potatoes	..	..	..	71	94	94
Vegetable fats	..	..	..	39	41	17
Milling products	..	..	..	53	47	48

This table shows what the war meant for the German people, how low their food standard had declined. While these tables refer to the average consumer—the heavy worker receiving more—these figures can quite well be used to indicate the decline affecting the German workers in general.

Before we leave this survey of wages and purchasing power during the war, it will be of interest to make a separate survey of the wages of men and women. A very considerable number of women entered industry during the war. The number of men and women in establishments employing ten or more workers in industry and mining was (according to the reports of the factory and mine inspectors):

Sex	1913	1918
Men	5,794,035	4,296,969
Women	1,592,138	2,319,674

Thus, the percentage of women employed has increased from slightly over 20 per cent in 1913 to over one-third in 1918; the absolute number of employed women increased by almost 50 per cent, while that of men declined by about 25 per cent.

The wages of men and women developed as follows:

\* The figures refer to conditions in Bonn but are, on the whole, typical for the whole of Germany; they are taken from Dr. W. Bach, *Untersuchungen über die Lebensmittelrationierung im Kriege und ihre physiologisch-hygienische Bedeutung auf Grund der Lebensmittelversorgung in Bonn während der Zeit vom 1. Juli 1916 bis 28. Dezember 1918*; they are quoted in W. Zimmermann, l.c., p. 457. The pre-war figures are based on the study by Zuntz, Eltzbacher and R. Kuczynski, *Die Deutsche Volksernährung im Kriege*.

## AVERAGE GROSS MONEY WAGES

*(First half of 1914 = 100)*

<i>Year</i>	<i>Men</i>	<i>Women</i>
1914*	100	100
1914†	96	85
1915	112	104
1916	130	129
1917	173	176
1918	218	233

Under the impact of the measures taken at the beginning of the war the wages of women declined much more than those of men. By 1916, their wages had again reached the level relative to that for men prevailing in pre-war years. Only in 1918 did the increase in women's wages pass that of the men's. Part of this increase is due to a shifting of women to industries paying less low wages. There are several industries in which the wages of women increased less than those of men; the most important among these are: the leather, rubber, electro and clothing industries. One cannot say that it was chiefly in the war industries that women improved their position relative to that of men. For the industries in which women did considerably improve their relative position include the food industry, as well as the metal industry, while those in which they lagged behind include the war-important electro industry as well as the clothing industry.

Although, on the whole, the wages of women rose slightly more than those of men, it would be wrong to say that the position of women within industry was improved to any marked degree.

While the workers' purchasing power, their standard of nutrition and of clothing developed very unfavourably, and in the end led to record lows in the history of labour conditions in Germany, the housing standard also declined, although not as much as food and clothing. This was due chiefly to the fact that the construction of houses almost ceased during the war. Although in the beginning of the war, a number of dwellings became vacant through the conscription of single persons and through households being dissolved when the husband was conscripted, this small relief was soon counter-balanced by the

\* First half.

† Second half.

eventual almost complete cessation of residential building activity. The following table illustrates this very well; it gives the development of building activity in all German towns which in 1913 had a net increase of dwellings of more than two thousand:

NET INCREASE OF DWELLINGS IN GERMAN TOWNS,\*  
1913 TO 1918

<i>Town</i>	<i>1913</i>	<i>1914</i>	<i>1915</i>	<i>1916</i>	<i>1917</i>	<i>1918</i>
Berlin† .. ..	3,096	?	?	20	23‡	9
Chemnitz .. ..	3,745	1,885	412	127	13	6
Cologne .. ..	2,442	1,813	1,366	544	100	96
Dresden .. ..	2,376	2,162	627	321	114	82
Düsseldorf .. ..	3,576	1,518	1,068	121	65	11
Frankfort-on-Main ..	2,563	1,946	979	270	146	27
Hamburg .. ..	7,402	3,050	1,459	391	8	65
Leipzig .. ..	2,788	2,467	1,147	134	33	39
Munich .. ..	3,445	1,624	577	63	18	222
Stuttgart .. ..	2,104	1,649	645	66	46	37

If we add the figures for 1913 and for 1918 we arrive at a net increase of 33,537 for 1913 and of 594 for 1918, a decline of almost 100 per cent.

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We are without any reliable information on changes in the state of health, in the intensity of work, and even in the number of hours worked. Of course, we know even without any health insurance statistics that the state of health of the German workers deteriorated during the war. But we do not know to what extent. We also know, without any comprehensive statistics, that the number of hours worked per worker increased. But we do not know to what extent. As to the intensity of work we are safe in assuming that the worker had to expend more of his labour power. But we do not know whether his productivity increased; because, while we may be sure that the worker's declining state of health, poor food and long hours had a depressing effect upon his productivity, we do not know how far technical progress compensated for this. It is not improbable that towards the end of the war, the above-mentioned factors, to which must be added the raw material shortage and the

\* Quoted from R. Kuczynski, *Post-War Labor Conditions in Germany*.

† Without suburbs.

‡ Decrease.



resulting substitutes, more than compensated for any technical progress made during the war.

There is only one further important factor on which we have reliable statistical information, the development of accidents:

#### FATAL ACCIDENT RATE IN INDUSTRY, 1914 TO 1918\*

(Per 1,000 Employed)

Year	Fatal Accidents	Year	Fatal Accidents
1914	0.63	1917	1.03
1915	0.74	1918	1.01
1916	0.86		

The fatal accident rate increased during the war by more than 50 per cent, a truly extraordinary increase.

There cannot be the slightest doubt that the war years, 1914-1918, witnessed a very serious deterioration of the living and working conditions of the German worker.

### 3. THE YEARS OF INFLATION, 1919 TO 1923

During the five years 1919 to 1923 German national economy was in a state of chaos and disintegration. While the abyss between rich and poor widened immensely, while the rich grew ever richer and the number of profiteers increased rapidly, the absolute position of the working class, their misery and degradation, their standard of living, reached a new low.

Nobody can complain that there are not sufficient figures available on the most varied aspects of the state of labour. This can, unfortunately, be taken in the most literal sense. To express the average wage of an unskilled worker in the chemical industry in Berlin on November 15, 1923, for instance, thirteen figures are needed—and are available. The wage was 3,038,000,000,000 marks. The cost-of-living index on the same day (1914 equalling 100) was 58,717,115,300,000. If one realizes, that two days earlier, on November 13th, the cost-of-living index was considerably lower, amounting to only 32,006,486,800,000, and that a month earlier, on October 16th, it was less than 1 per cent of this figure, amounting to a paltry 123,709,176,200, it becomes obvious that even with a considerable amount of data available, it is really impossible to give a

\* See *Statistisches Jahrbuch für das Deutsche Reich*, annually.

connected statistical history of the state of labour during these years. But that does not relieve us of the endeavour to do our best and to give as much fairly reliable information as is possible.

During the months immediately following the war, partly in consequence of the revolution which had taken place, and partly because of a crazy conception that, in some respects, one could return in a day or two to pre-war conditions, a number of important changes in the whole situation took place.

One of the first decrees of the new Government provided for the 8-hour working day. Not for all workers—agricultural workers had to work longer—and not as a fixed working day, but as the maximum in most establishments where workers were employed. Within a few days after the revolution the workers had not only shortened the war working day to pre-war proportions, but had fought and won the battle for the 8-hour day. It was the first time in Germany that the workers had won a far-reaching success in their fight for a shorter working day. During the years from 1919 to 1922 the working week in Germany developed as follows:\*

WEEKLY HOURS OF LABOUR UNDER COLLECTIVE AGREEMENTS  
IN FORCE ON DECEMBER 31, 1919, TO 1922

<i>Weekly Hours</i>			<i>Percentage of Employees Covered</i>			
		<i>1919</i>	<i>1920</i>	<i>1921</i>	<i>1922</i>	
Up to 42 hours .. ..	0.1	8.4	6.9	5.1		
Over 42 to 45 hours ..	8.0	6.2	7.5	6.4		
Over 45 to 46 hours ..	21.2	15.8	15.6	13.5		
Over 46 to 47 hours ..	6.8	3.2	4.7	3.0		
Over 47 and under 48 hours	0.7	0.3	0.3	0.1		
48 hours .. ..	62.1	65.8	64.7	65.7		
Over 48 hours .. ..	1.1	0.3	0.3	6.2		

We see that the majority of the workers worked 48 hours per week. About one-third worked even less; and only a very small percentage worked more than 48 hours. The revolution had wrought a great improvement in this respect. One of the most important achievements for the working class of the revolution, the institution of work councils, and the fact that most collective agreements were made binding beyond the domain† of the

\* *Reichsarbeitsblatt*, annually.

† That is, they applied also to unorganized workers and to establishments with employers who did not belong to an employers' organization.

contracting parties, helped to make agreements on working hours really effective throughout industry.

As many conditions were determined by collective agreements it is useful to study the number and range of such agreements.\*

#### NUMBER OF COLLECTIVE AGREEMENTS AND OF WORKERS COVERED, 1913 AND 1919 TO 1923

<i>Date</i>		
<i>December 31st</i>	<i>Collective Agreements</i>	<i>Workers Covered</i>
1913	10,885	1,398,597
1919	11,009	5,986,475
1920	11,624	9,561,323
1921	11,488	12,882,874
1922	10,768	14,261,106
1923	8,790†	13,135,384†

The number of collective agreements has barely changed as compared with pre-war times, but the number of workers covered by them has increased more than ten times, and their enforcement was easier and more effective.

The question arises as to whether unemployment had increased to such an extent as in many cases to render illusory the gain of the 8-hour day. Unemployment during the period under review developed as follows:‡

#### UNEMPLOYMENT IN TRADE UNIONS, OCTOBER, 1918, TO DECEMBER, 1923

<i>Year and Month</i>	<i>Per cent</i>	<i>Year and Month</i>	<i>Per cent</i>	<i>Year and Month</i>	<i>Per cent</i>
October, 1918	0.7	1920	3.8	January/August, 1923	5.3
November, 1918	1.8	1921	2.8	September, 1923	9.9
December, 1918	5.1	March/October, 1922	0.8	October/December	23.6
1919	3.7	1922	1.5	1923	10.2

During the first months of peace unemployment rose rapidly but in the course of the first few months of 1919 it returned to "normal" proportions; in 1920 it fluctuated between 1.9 and 6.0 per cent, in 1921 between 1.2 and 4.7 per cent. In 1922 it declined from 3.3 per cent in January to 0.6 per cent in June, and then rose from 0.6 per cent in July to 2.8 per cent in December. During 1923, unemployment was high in the first eight months, fluctuating between 3.5 and 7.0 per cent; during

\* *Reichsarbeitsblatt*, 1924, Nr. 29/30.

† The figure is an official estimate.

‡ *Statistisches Jahrbuch für das Deutsche Reich*.

the last four months it rose rapidly to crisis proportions. Not only this, but, as the following years showed, a new period in the development of unemployment was introduced, a period of high unemployment over the trade cycle as a whole.

On the whole, we can say that during the years of inflation, unemployment was not very high; it was sometimes exceptionally low, and occasionally very high, but over the greater part of the period it was "normal" as measured by pre-war experience. To this must be added that the first legislative act of the Federal Office for Economic Demobilization was, on November 13, 1918, the introduction of general unemployment relief.

I think that in the above items—shorter hours of work, spread of collective agreements, relatively normal unemployment, and unemployment relief—I have mentioned the most important factors which showed a favourable or relatively favourable development. Most of the other changes in the conditions of labour were unfavourable, forcing the standard of living even below that prevailing during the war. In these pages we are not discussing the general social and political situation of labour; but there is no doubt that, while labour's standard of working and living developed unfavourably, there were times—from November, 1918, until the spring of 1919, again in March, 1920, and in the summer of 1923—when labour's political position improved immensely. But these improvements, the consequences of revolutionary risings or of a general strike, were short-lived; the forces of reaction prevailed again and again. At the end of the period, labour had either lost all the advantages gained, or the advantages gained were converted, sometimes with the co-operation of reactionary labour leaders, into points of vantage for the reaction. Even the universal suffrage which the workers had won in Prussia—they had won it for federal elections in 1871—was turned into a weapon against them. In his introduction to *Class Struggles in France*, by Karl Marx, Engels remarks: "There had long been universal suffrage in France, but it had fallen into disrepute through the misuse to which the Bonapartist government had put it." This misuse Engels contrasts with conditions in Germany during the seventies and eighties: "But the German workers rendered a second great service to their cause in addition to the first, which they performed by their

mere existence as the strongest, best disciplined and most rapidly growing Socialist Party. They supplied their comrades of all countries with a new weapon, and one of the sharpest, when they showed them how to use universal suffrage."

In post-war Germany universal suffrage was to be used by the majority of the working class, under misleading leadership of Socialdemocrats and Socialdemocratic trade union functionaries, not as "a new weapon and one of the sharpest" but more and more as the *only* weapon, and, thus, it gradually became useless, and then dangerous—and under Hitler it became what it had been under Napoleon III, a disreputable affair.

\* \* \*

Let us now study the development of wages and purchasing power during the years of inflation. All the figures we can give are at best rough estimates for specific groups of workers. The following table\* gives an index of wages for some few categories of workers:

#### WEEKLY WAGES FOR SELECTED GROUPS OF WORKERS,

1919 TO 1923

(1913 = 100)

<i>Year and Month</i>	<i>Railway Workers</i>		<i>Underground</i>	<i>Compositors</i>
	<i>Skilled</i>	<i>Unskilled</i>	<i>Miners†</i>	
1919	400	530	340	300
January 1920	500	670	600	450
December 1920	760	1,010	990	770
January 1921	850	1,140	1,000	770
December 1921	1,400	1,880	1,780	1,500
January 1922	1,510	2,030	1,810	1,570
December 1922	40,000	55,390	45,230	38,570
January 1923	64,380	89,010	69,570	62,440
December 1923	69,440‡	78,990‡	86,200‡	81,520‡

In 1919, gross money wages were between 200 and 430 per cent higher than in 1913. Between January and December, 1920, wages increased by over 50 per cent. Between January and December, 1921, the increase was over two-thirds. Between January and December, 1922, the increase fluctuated between 24 and 28 times. Between December, 1922, and January, 1923—that is, from one month to another—wages rose by over 50

\* See *Zahlen zur Geldentwertung, etc.*

† Ruhr territory.

‡ Thousand millions.



per cent. The increase during 1923 was unique. Wages at the end of the year were over a thousand million times higher than at the beginning of the year.

The Central Statistical Office has also made an attempt to compute the real wages of these workers.\* Their estimated movement (and it is at best a rough estimate) was:

### WEEKLY REAL WAGES OF SELECTED GROUPS OF WORKERS, 1919 TO 1923

(1913 = 100)

Year and Month	Railway Workers		Underground	Compositors
	Skilled	Unskilled	Miners†	
January 1919	92	120	82	72
January 1920	67	90	80	61
December 1920	66	88	85	67
January 1921	72	96	84	66
December 1921	72	96	91	77
January 1922	69	94	83	72
December 1922	55	76	62	53
January 1923	44	61	48	43
December 1923	58	66	73	68

The table gives a very rough indication of the decline of real wages and of their fluctuations during the period under review. The latter factor becomes even more obvious if we select some outstanding months during each year:

### PEAK AND LOW OF REAL WAGES FOR SELECTED GROUPS OF WORKERS, 1920 TO 1923

(1913 = 100)

Year	Railway Workers		Underground	Compositors
	Skilled	Unskilled	Miners	
1920	52·3†	69·9‡	62·7‡	43·5**
	75·3§	99·8§	91·6‡‡	69·9§
1921	67·3***	90·1***	81·9‡‡	63·1‡‡
	90·3‡‡	121·1‡‡	97·5§§	76·6¶
1922	48·5§§	66·7‡	51·6‡‡	44·4§§
	83·4§	114·4§	83·1	74·1¶¶
1923	42·9***	59·4***	47·6***	35·7‡‡
	59·6‡	77·0¶¶	86·2‡	74·6‡

\* Zahlen zur Geldentwertung, etc.

† March. § September.

‡ December. \*\* April.

‡‡ October. §§ November.

¶¶ June. \*\*\* July.

† Ruhr Territory.

|| May.

‡‡ August.

||| January.

The fluctuations are truly enormous. In some cases they amount to over 100 per cent. But not only are the fluctuations of real wages very great within one industry and during one year. The peaks of real wages during the same year often vary considerably from industry to industry, and so do the lows. In 1922, for instance, the low of real wages was reached by the skilled railway workers in November, by the unskilled in March, by the miners in October and by the compositors in November; the high point was reached by the skilled and unskilled railway workers in September, by the miners in January and by the compositors in June.

An even more intimate picture of such fluctuations of real wages is given in a study of conditions among chemical workers in Berlin during the short period, October 1 to November 15, 1923. The pay days vary, and sometimes the skilled and unskilled workers get exactly the same amount, lump sums fluctuating, according to the degree which the inflation process has reached, between 500,000,000 and 500,000,000,000 marks.\*

#### REAL WAGES OF CHEMICAL WORKERS IN BERLIN IN 1923

(1914 = 100)

<i>Pay Day</i>	<i>Skilled</i>	<i>Unskilled</i>
	<i>Workers</i>	
October, 1	46	66
5	61	75
8	32	46
10	34	44
13	9	13
16	25	32
19	11	16
23	23	32
26	42	59
30	19	27
November, 2	17	21
5	22	32
8	32	42
13	14	20
15	26	34

The real wages of skilled workers fluctuate between 9 and 61 per cent of their pre-war level, those of the unskilled between 13 and 75 per cent—and these fluctuations take place within less than a fortnight! It is obvious that, while we can appreciate

\* See R. Kuczynski, *Post-War Labor Conditions in Germany*.

that labour conditions reached an almost incredible degree of deterioration, it is impossible to give a statistically connected history of the wage development for all workers.

A comparison between wages for some categories of workers in Berlin and the actual amount of the cost of a minimum of existence in marks and pfennigs is given by R. Kuczynski, and reveals the decline in the standard of living, and how far wages moved below the minimum of existence.\*

WAGES AND THE MINIMUM COST OF SUBSISTENCE OF BRICKLAYERS IN BERLIN, 1913-1914 AND 1920 TO 1923

<i>Year and Month</i>	<i>Weekly Wages (In marks)</i>	<i>Weekly Minimum Cost of Subsistence for a Family with 2 Children (In marks)</i>
1913-1914	41·82	28·80
March, 1920	204·70	322·00
June, 1920	299·00	304·00
September, 1920	312·80	299·00
December, 1920	312·80	327·00
March, 1921	324·30	298·00
June, 1921	324·30	311·00
September, 1921	377·38	349·00
December, 1921	547·31	557·00
March, 1922	715·56	789·00
June, 1922	1,472·00	1,195·00
September, 1922	3,552·62	4,714·00
December, 1922	14,950·00	24,994·00
March, 1923	69,283·00	71,121·00
June, 1923	185,344·00	252,582·00
September, 1923	565,000,000·00	427,000,000·00
December, 1923	32·44†	30·89†

The Berlin bricklayers were among the best paid workers in Germany and Kuczynski's minimum of subsistence is at best a rock-bottom minimum for people whose conception of necessities has shrunk through four years of war and misery. Before the war the wages of bricklayers were 45 per cent above the minimum of subsistence. In March, 1920, they were about 36 per cent below it. In September, they were slightly above, but declined below again by December. In December, 1922, they were about 40 per cent below the minimum, and in December, 1923, they were again 5 per cent above the minimum. When

\* See R. Kuczynski, *Post-War Labor Conditions in Germany*.

† Rentenmarks.

we realize that this was the experience among the very best paid workers in Germany, we can imagine what was the relation between the wages of the lower paid workers and the cost of subsistence. There were times when the majority of German workers got less than 50 per cent of the above given minimum subsistence.

Let us now compare the wages of the lowest and the less lowly paid workers during the years. On the basis of the data published by the German Central Statistical Office, Bresciani-Turroni has computed, an index of the rates paid to skilled workers employed by the Reichs railways, expressed as percentage of the unskilled rate:\*

WAGES OF SKILLED RAILWAY WORKERS AS PERCENTAGE OF  
THOSE OF UNSKILLED WORKERS

(Unskilled = 100)

Year	Index	Year	Index	Year	Index
1913	146	1917	126	1921	109
1914	146	1918	122	1922	107
1915	144	1919	112	1923†	106
1916	136	1920	109		

This table is of very great interest; it shows a development, probably unique in its rapidity in the history of wages. While we are only at the beginning of the study of the relation of the wages of better and lower paid workers,‡ we already know that, when there is a sharp decline in real wages, the difference between the wages of the lower and the less lowly paid workers tends to become smaller. The reason is that, as wages are generally anyway low, it is usually difficult again to lower them to any considerable degree without endangering the health, that is the working capacity of the worker. If wages are then lowered those of the less lowly paid workers are reduced more, because the limit has earlier been reached with the unskilled, or with women, negro or other specially low paid workers. There may be cases, of course, when the employers do not care if mortality

\* C. Bresciani-Turroni, *The Movement of Wages in Germany During the Depreciation of the Mark and after Stabilization*. *Journal of the Royal Statistical Society*, Part III, 1929.

† January to October only.

‡ For some further study of this problem see Vol. II of this *Short History of Labour Conditions*, pp. 78-80 and 146-150.

risers and efficiency declines rapidly. However, a relative decline, as indicated in the above table, is very unusual. It shows that the distinction between skilled and unskilled workers almost disappeared: the wages of the skilled workers, which in pre-war years were almost 50 per cent above those of the unskilled, were only about 5 per cent above them in 1923. But perhaps the development on the railways was something quite unusual? Let us look at some other data.\*

#### WAGES OF SKILLED WORKERS AS PERCENTAGE OF THOSE OF UNSKILLED WORKERS

(Unskilled Workers' Wages = 100)

Category	1913	September, 1923
Metal Workers .. ..	157	109
Textile Workers (male) ..	122	112
Chemical Workers .. ..	123	109
Building Trade Workers ..	128	106

We see then, that the case of the railway workers was more or less normal. In September the building trade workers show the same relation between the skilled and unskilled, and in three other important industries the difference between skilled and unskilled workers' wages fluctuates between 9 and 12 per cent. Everywhere the relative position of the skilled workers has declined immensely—for the simple reason that the employers could not reduce the wages of the unskilled workers in the same degree without endangering the very lives of these workers. The above figures reflect the situation in a single month only; it actually changed from month to month and the years 1920–1922 were somewhat better for the skilled workers.

The tendencies which we have observed in the relations between the wages of skilled and unskilled workers hold true also for those between the wages of men and women. There was one exception to this, and that was in the first phase following the war. We found that in the last year of the war the position of women had improved relatively to that of men. Women's wages had increased, as compared with the first half of 1914, by 133 per cent, while those of men had risen by only 118 per cent. According to the data collected in the *Reichsarbeitsblatt*,† the wages of women remained fairly stable between September, 1918, and March, 1919, while those of men continued to in-

\* See *Zahlen zur Geldentwertung*.

† 1919, pp. 618 f.



crease by somewhat less than 10 per cent. At the same time, the employment of women decreased rapidly. In fact, in March, 1919, the number of women employed in industry in relation to that of men was about the same as in March, 1914. Within a few months, the "peace-time status was re-established."

But, as to wages, this changed again in the course of the following years because the real wages of all workers were driven down, and those of women, being already very low, could not be reduced by as much. If we compare wages in the textile industry\* we get the following results:

WAGES OF WOMEN WORKERS AS PERCENTAGE OF MEN'S WAGES  
IN THE TEXTILE INDUSTRY

	<i>Category</i>			<i>1913</i>	<i>September, 1923</i>
Skilled	..	..	..	66	76
Unskilled	..	..	..	67	74

The relation of women's wages to that of men has improved—but the wages of skilled and unskilled workers in general have come much nearer to each other than those of male and female workers.

\*                      \*                      \*

No intricate investigation is needed in order to ascertain that, under such wage conditions, the production per worker and per hour must have declined rapidly. Workers as poorly nourished, clothed and housed as those in Germany between 1919 and 1923 could no longer be counted among modern industrial workers. They lived under such different conditions that their standard of living and working was on a very different basis from that of workers in the other large capitalist countries.

But not only were the workers different; the factories differed also. When wages—as measured by purchasing power—became as low as those of the German workers in those years, it again became profitable for employers in some branches to return to hand labour. This was especially tempting whenever there was a shortage of raw materials, of coal, or oil, for fuelling the machines. There were, for instance, match factories in Baden in which machine halls were silent and cold, while workers were huddled together into a relatively small space, packing the matches into

\* See *Zahlen zur Geldentwertung*.

boxes and doing other work by hand which has usually been done by machines for many decades.

In some other factories, however, efficiency of work per hour and worker was the same as, or even greater than, before the war. However, both the hand-working match factories in Baden and those which worked as efficiently as before the war were exceptions, though not infrequent ones. It is safe to say that the majority of factories produced less per worker and per hour than before the war. That does not necessarily imply that the subjective, that the personal effort of the individual worker was less than before the war; it means that, with the same effort as formerly, the individual worker produced less per hour, partly because of poor nourishment, etc., partly because of run-down machines, and so on.

On the whole, I would hesitate to say that the intensity of work increased during these years. The relatively improved political status of labour was reflected in the factories in a partially successful stand against an increase in the intensity of work. It is not surprising, therefore, if during these years the rate of accidents declined:\*

#### FATAL ACCIDENT RATE IN INDUSTRY, 1918 TO 1923

<i>Year</i>	<i>Killed per 1,000 Insured</i>
1918	1.01
1919	0.78
1920	0.63
1921	0.62
1922	0.53
1923	0.56

Within a few years the fatal accidents rate was almost halved. The rate in 1922 is the best on record; the rate in 1923 is the same as in 1910, the best pre-war year.

Since 1922 we also have again health statistics at our disposal. The number of cases of illness and the number of days of illness per insured member developed as follows:\*

#### HEALTH CONDITIONS, 1913, 1922 AND 1923

<i>Year</i>	<i>Illnesses Per Member</i>	<i>Sick Days</i>
1913	0.42	8.66
1922	0.48	9.66
1923	0.34	6.96

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\* *Statistisches Jahrbuch*, annually,

Conditions in 1922 were worse than in 1913 or any other pre-war year on record; the improvement in 1923 was considerable—but, unfortunately, as we shall see later, shortlived.

Housing conditions began to improve, especially in the last years under review. The following table gives the net increase in those towns where over 2,000 additional dwellings were provided in 1913:\*

NET INCREASE IN DWELLINGS IN GERMAN TOWNS,  
1913 AND 1919 TO 1923

<i>Town</i>	<i>1913</i>	<i>1919</i>	<i>1920</i>	<i>1921</i>	<i>1922</i>	<i>1923</i>
Berlin† .. ..	3,096	316	294	?	3,057	3,863
Chemnitz .. ..	3,745	23	272	188	276	432
Cologne .. ..	2,442	393	978	2,750	2,531	2,663
Dresden .. ..	2,376	183	807	944	715	702
Düsseldorf .. ..	3,576	6	345	615	869	856
Frankfort-on-Main ..	2,563	229	1,171	864	457	1,013
Hamburg .. ..	7,402	452	1,416	2,187	2,630	3,065
Leipzig .. ..	2,788	298	565	518	1,174	882
Munich .. ..	3,445	607	1,469	748	1,441	958
Stuttgart .. ..	2,104	378	913	352	939	687

In a few cases the 1913 level was reached again, in the majority of cases building activity, though vastly increased as compared with the war years and with 1919, was in 1923 still considerably below pre-war level. And even in the towns where the pre-war level was attained housing conditions were much worse than in pre-war years, chiefly for the following two reasons: during many years there had been almost no new building and many old houses had greatly deteriorated or had become so dilapidated that they had to be abandoned; also the considerable number of new households being set up or re-established after the war caused a sharply increased demand for accommodation which could not be adequately met. Consequently, housing conditions, throughout the whole period under review, remained very bad, growing worse in 1919 and part of 1920, and improving during the following years only very slowly, being still extremely bad in 1923.

In conclusion, one can say that rarely in the history of capitalism have workers suffered so acutely as did the German workers from 1914 to 1923, and especially during the immediate post-war years.

\* R. Kuczynski, l.c.

† 1913, 1919 and 1920 without suburbs; 1921 to 1923 Greater Berlin.

## 4. A "NORMAL" TRADE CYCLE, 1924 TO 1932

For the years from 1924 to 1932 we have more and better material than for any other phase in the history of labour conditions. The years following the inflation brought a considerable and rapid improvement in the conditions of labour. After almost ten years of war and inflation, the German working class was to have a few normal years—"normal" that is, as compared with the immediately preceding years, but, we shall see, not as compared with pre-1914 years.

The first great difference between the pre-1914 and the post-1923 years becomes obvious when we survey the development of unemployment:\*

## UNEMPLOYMENT, 1924 TO 1932

Year	Percentage	Year	Percentage	Year	Percentage
1924	11.4	1927	8.8	1930	22.7
1925	8.3	1928	9.7	1931	34.7
1926	17.9	1929	14.6	1932	44.4

The extent of unemployment was here very much higher than in pre-war years; much higher also than in the years of war and inflation. The effects of monopoly capitalism made themselves felt to a high degree, perhaps additionally aggravated by the difficult position of German economy after the exhaustion of war and inflation, and through the conditions imposed on her by the Treaty of Versailles. But if conditions were aggravated by these facts, they cannot have been very much so. Unemployment in Germany during these years did not, except in the crisis years, move on a level unusual in other countries.

To unemployment must be added another condition which began to play an increasing rôle under monopoly capitalism, and not only so in Germany: short-time work.

PERCENTAGE OF WORKERS WORKING SHORT-TIME,  
1921 TO 1932

Year	Percentage	Year	Percentage	Year	Percentage
1921	5.4	1925	8.6	1929	7.5
1922	2.8	1926	16.0	1930	13.8
1923	26.8	1927	3.4	1931	19.7
1924	15.3	1928	5.7	1932	22.6

\* If no sources are given for figures on the following pages they are taken either from: Jürgen and Marguerite Kuczynski, *Die Lage des Deutschen Industriearbeiters*, or from my contributions to *Finanzpolitische Korrespondenz*, 1929 to 1933.

For some of these years it is possible to compute not only the percentage working short-time but also their average losses in hours, and thus to arrive at an average percentage of unemployment through short-time work:

PERCENTAGE OF ADDITIONAL UNEMPLOYMENT  
THROUGH SHORT-TIME WORK, 1924 TO 1932

<i>Year</i>	<i>Percentage</i>	<i>Year</i>	<i>Percentage</i>
1924	3·6	1929	2·4
1925	2·6	1930	3·4
1926	4·4	1931	5·2
1927	0·7	1932	6·2
1928	1·4		

From these tables we can get a clear picture of the effects of short-time and unemployment upon the working class. Insecurity of work increased enormously and the wage losses through unemployment and short-time, as compared with pre-war years, rose considerably. Even in years of briskest trade activity during the cycle, unemployment often reached what in pre-war years could have been called crisis proportions—although I am not sure whether the percentage of unemployment among the workers in 1932 is necessarily without precedent, while the absolute number as well as the percentage of the total population unemployed are, of course, record figures.

The following table gives the total number of workers fully employed in each year, and the total percentage of actual working time lost through unemployment and short-time.

PERCENTAGE OF WORKERS FULLY EMPLOYED AND PER-  
CENTAGE OF WORKING TIME LOST THROUGH UNEMPLOY-  
MENT AND SHORT-TIME, 1924 TO 1932

<i>Year</i>	<i>Percentage of Fully Employed Workers</i>	<i>Percentage of Working Time Lost</i>
1924	73	15
1925	83	11
1926	66	22
1927	88	10
1928	85	11
1929	78	17
1930	64	26
1931	46	40
1932	33	51

In none of these years under review were less than one-



eighth of all workers affected by unemployment or short-time. During two years more than half of all workers were either unemployed or working short-time. In only three years were less than one-fifth affected. At the height of the crisis, probably every second family in Germany (including non-working class families) had a member who was either unemployed or was working short-time.

And this was the best period in the history of labour conditions from 1914 to the present day! For even at the height of the crisis the standard of living of the German workers was, on the whole, still better than that prevailing during the last war and the inflation years.

\* \* \*

After having reached record lows during the inflation years wages improved not inconsiderably during the first years of the trade cycle under review. In the following table\* we give first a survey of gross wages by industries and for industry as a whole. The term gross wages applies here to wage rates—it will be modified somewhat in later tables.

#### AVERAGE GROSS MONEY WAGES IN INDIVIDUAL INDUSTRIES AND IN AGRICULTURE, 1924 TO 1932

(1900 = 100)

Year	Build- ing	Metals	Tex- tiles	Wood- working	Print- ing	Chemi- cals	Trans- port	Mining	Agri- culture
1924	134	124	127	137	130	147	149	135	122
1925	192	154	157	190	180	188	184	159	156
1926	210	163	166	208	192	201	200	172	157
1927	219	171	180	219	204	214	204	184	172
1928	236	179	195	242	221	233	222	196	185
1929	254	184	201	256	232	247	233	204	195
1930	257	185	203	262	234	251	235	206	194
1931	241	175	197	247	223	241	226	190	192
1932	184	150	174	206	190	203	193	160	170

In the beginning differences between wages in individual industries as compared with 1900 were not very great. Agriculture and metals had increased least, chemicals and transport most, the difference between these two indices was relatively small, the highest being only about 20 per cent above the lowest.

\* The figures are based on the official statistics of wage rates (cf. *Wirtschaft und Statistik*); the wages for miners are shift-earnings in hard- and soft-coal mining; cf. also Jürgen Kuczynski, *Löhne und Ernährungskosten in Deutschland 1820 bis 1937*.

But during the next year the differences widen considerably, and wages increase in the various industries at very varying rates: in building, for instance, by almost 40 per cent, in mining by less than 20 per cent. In 1929 the index of wages in wood-working is by about 40 per cent higher than that in the metal industry.

In industry as a whole, the development was as follows:

AVERAGE GROSS MONEY WAGES, 1924 TO 1932

(1900 = 100)

<i>Year</i>	<i>Industry</i>	<i>Industry and Agriculture</i>
1924	135	132
1925	169	166
1926	182	176
1927	190	187
1928	205	200
1929	215	210
1930	218	213
1931	206	203
1932	177	175

Wages rose without interruption from 1924 to 1930; as we see, the rise continued into the crisis year of 1930, which is explained by a certain rigidity of wage rates (in contrast to earnings); if, for instance, wage rates were raised in October, 1929, and fixed for a year, it is not surprising that the average for 1930 is higher than that for 1929. From 1930 to 1932 wage rates declined to a level somewhere between that of 1925 and 1926. The very unfavourable development of wage rates in agriculture depressed the general average during the years of rising wage rates; in the crisis, wage rates in agriculture declined less because they were already so low.

Let us now study in more detail the development of actual wages—that is, of earnings, of what the worker finds in his pay envelope. There are few countries for which we can make studies as detailed as for Germany. We can give an approximate estimate as to the extent by which actual gross wages rose above the wage rate level—in case, for instance, when in busy periods employers paid above the current rate. We can estimate the wage losses of the workers through short-time and unemployment. We can estimate the effects of taxes and social insurance contributions as well as those of social insurance benefits.

And we shall see how wage rates compare with the actual amounts found in the workers' pay envelopes. The following tables enable us to follow this process from stage to stage, and to note how these various influences affected wages in individual years, how different was the influence of the various factors in years of relative prosperity and in years of crisis. These tables are also an indication of how rough are so many wage computations which do not take these factors into account, and remind us of how desirable it would be to have such computations for other countries for which the material is not available at present.

THE TRANSFORMATION OF WEEKLY WAGE RATES INTO  
ACTUAL AVERAGE EARNINGS, 1924 TO 1932

(In marks)

Year	Wage Rates		Additional Payments		Total Gross	
	Per Cent	Mark	Per Cent	Mark	Per Cent	Mark
1924		30.55	5	1.55		32.10
1925		38.25	8	3.05		41.30
1926		41.05	6	2.45		43.55
1927		43.00	11	4.75		47.75
1928		46.30	11	5.10		51.40
1929		48.55	9	4.35		52.90
1930		49.20	4	1.95		51.15
1931		46.60	4	1.85		48.45
1932		39.95	3	1.20		41.15

Year	Wage Losses through		Unemployment		Total Loss		Remaining Wage
	Per Cent	Mark	Per Cent	Mark	Per Cent	Mark	
1924	11.4	3.65	3.6	1.15	4.80		27.30
1925	8.3	3.45	2.6	1.05	4.50		36.80
1926	17.9	7.80	4.4	1.90	9.70		33.80
1927	8.8	4.20	0.7	0.35	4.55		43.20
1928	9.7	5.00	1.4	0.70	5.70		45.70
1929	14.6	7.70	2.4	1.25	9.00		43.90
1930	22.7	11.60	3.4	1.75	13.35		37.80
1931	34.7	16.80	5.2	2.50	19.30		29.15
1932	44.4	18.25	6.2	2.50	20.75		20.40

Year	Social Contributions and Taxes		Remaining Wage		Unemployment Benefits		Actual Earnings
	Per Cent	Mark	Per Cent	Mark	Per Cent	Mark	
1924	7½	2.05	25.25	35	1.30		26.50
1925	7	2.60	34.20	40	1.35		35.60
1926	9	3.05	30.80	40	3.10		33.90
1927	10	4.30	38.90	40	1.70		40.55
1928	11	5.05	40.70	40	2.00		42.70
1929	11	4.85	39.10	40	3.10		42.20
1930	13	4.90	32.90	35	4.05		36.95
1931	14	3.95	25.25	30	4.90		30.10
1932	14	2.85	17.55	23	4.20		21.75

The transformation is an extraordinary one. The difference between gross wages and average actual earnings is greatest during the crisis, when actual earnings are little more than half of gross earnings. This is chiefly because of the enormous wage losses through short-time and unemployment.

The rapid changes in actual earnings can be seen even more clearly from the following table which gives them in index form :

INDEX OF ACTUAL EARNINGS, 1924 TO 1932  
(1913-1914 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1924	94	1929	150
1925	127	1930	131
1926	125	1931	107
1927	144	1932	77
1928	152		

During the crisis actual wages declined by about half, after an increase of more than 50 per cent from 1924 to 1929.

In some industries the development was much wilder even than in industry as a whole. Of course, an average is usually composed of items moving together at varying rates, so it is not surprising that there are industries in which actual earnings differed more from wage rates than in industry as a whole. But the following comparison of wage rates and actual earnings in industry as a whole and in the building industry is very striking indeed :

WAGE RATES AND ACTUAL EARNINGS

(In marks)

<i>Year</i>	<i>Industry as a Whole</i>		<i>Building Trades</i>	
	<i>Wage Rate</i>	<i>Earnings</i>	<i>Wage Rate</i>	<i>Earnings</i>
1924	30·55	26·50	32·60	26·10
1929	48·55	42·20	61·65	50·80
1932	39·95	21·75	44·70	13·10

Wage losses through short-time and unemployment in the building trades in 1932 were so enormous that actual earnings during the crisis were barely one-quarter of what they had been in 1929, and while the wage rate in industry as a whole was, in 1932, not quite double the amount of actual earnings, that in the building trades was more than three times higher than actual wages.

While actual earnings moved rather wildly, the cost of living appeared relatively stable, although it also fluctuated more than usual.

## COST OF LIVING, 1924 TO 1932

(1900 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1924	166	1927	192	1930	193
1925	182	1928	197	1931	177
1926	184	1929	200	1932	157

From 1924 to 1929 the cost of living rose by about 20 per cent, to a level double as high as that in 1900; during the crisis the index moved down rapidly, below the 1924 level. In 1932 the cost of living was almost 60 per cent higher than in 1900, but only about 20 per cent higher than in 1913 or the first half of 1914; it had declined during the crisis by over 20 per cent.

If we now compute on the basis of these figures an index of net real wages, we get the following figures:

## NET REAL WAGES, 1924 TO 1932

(1913-1914 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1924	74	1927	98	1930	89
1925	91	1928	100	1931	79
1926	85	1929	98	1932	64

In 1924 real wages were a quarter less than before the outbreak of the war. They rose almost from year to year until in 1928 they reached the 1913-1914 level. During the crisis they declined again rapidly, and in 1932 they were less than two-thirds of what they had been in 1928. And this in spite of the fact that the cost-of-living index which we have used is the official one, indicating too sharp a decline of the cost of living during the crisis. Actually real wages had declined even more between 1929 and 1932.

If we now compare the development of real wages during the 1924-1932 trade cycle with that in former ones, we get the following results:



## AVERAGE REAL WAGES BY TRADE CYCLES, 1820 TO 1932\*

(1900 = 100)

<i>Period</i>	<i>Index</i>	<i>Period</i>	<i>Index</i>
1820-1829	86	1879-1886	84
1830-1839	82	1887-1894	92
1840-1849	74	1894-1902	97
1844-1852	76	1903-1909	98
1852-1859	66	1909-1914†	96
1860-1867	74	1914-1923‡	70
1868-1878	79	1924-1932	86

The development of wages in the period of monopoly capitalism becomes very clear from this table: after a certain hesitation on the level around 1900, wages began to fall rapidly during the war and inflation period, and remained very low even during the only "normal trade cycle." Monopoly capitalism is clearly a period of falling real wages; the new methods of exploitation—or, rather, the blend of late nineteenth century methods with older ones—means, as far as wages are concerned, a tendency for real wages to decline. The change in tendencies is even better illustrated in the following table which gives the average real wages for the three periods of capitalism:

## AVERAGE REAL WAGES IN THE THREE PERIODS OF CAPITALISM

(1900 = 100)

Period of Early Industrial Capitalism (Much extensive exploitation), 1820-1859	.. .. 77
Period of Maturing Industrial Capitalism (Concentration on intensive exploitation), 1860-1902	85
Period of Monopoly Capitalism, 1903-1939§	.. 80

Each of these periods represents about one working life. It is surprising to see how little real wages really changed for a worker whose working life was completely contained in one or the other of the three periods. True, the level of real wages at the end of the century was about 50 per cent higher than in the fifties, when it was about 25 per cent lower than in the twenties; and during the nineteen-twenties real wages were about the same as a hundred years earlier. But the fluctuations between the periods 1820-1859, 1860-1902, and 1903-1939 were remarkably small.

\* Gross real wages, 1820-1887; net real wages, 1887-1932.

† No full trade cycle; 1914 means first half-year.

‡ Estimate; 1914 means second half-year.

§ 1939, January to August only.

At the same time, it must be kept in mind that, as the workers always live at a low standard, even small fluctuations, upwards as well as downwards, mean very much in their lives; they may mean the difference between hunger and relative satisfaction, between an unhealthy dwelling or one which is not detrimental to health, between warm and cold rooms, or a warm coat and inadequate clothing.

Before we leave the subject of real wages, it is useful to compare wages with the actual cost of living, as computed on the basis of data provided by the Central Statistical Office.

#### NET WAGES AND ACTUAL COST OF LIVING,

1924 TO 1932

(In marks)

<i>Year</i>	<i>Weekly Wage</i>	<i>Weekly Cost of Living</i>
1924	26·50	41·20
1925	35·60	45·15
1926	33·90	45·60
1927	40·55	47·65
1928	42·70	49·00
1929	42·20	49·65
1930	36·95	47·55
1931	30·10	43·85
1932	21·75	39·05

Even in the best years the average weekly wage did not cover the official cost-of-living budget, and in the worst year it was little more than half of it. Such were the conditions of the workers in their "best period" since 1914!

Before we quit the subject of wages, it is useful to study two more aspects: the relative movement of the wages of the low and less lowly paid categories of workers, and the movement of relative wages. The former can be studied by comparing the relative development of the wages of skilled and unskilled workers, and of male and female workers.

During the first years under review the wages of the skilled gained slightly on the unskilled; in 1927 the trend was reversed. In 1929 the position remained stable. During the crisis the unskilled, as was to be expected, gained again on the skilled. While the development during the crisis develops according to a pattern to which we have become accustomed in our investigations, it is surprising to see how little the skilled gained on the unskilled during the preceding phase.

## WAGE RATES OF VARIOUS CATEGORIES OF WORKERS,

1924 TO 1932\*

Year	Wages of Male Workers		Wages of Female Workers	
	Skilled (1924 = 100)	Unskilled	Skilled in Per Cent of Male Skilled	Unskilled in Per Cent of Male Unskilled
1924	100	100	79	73
1925	128	126	79	74
1926	136	135	79	74
1927	142	146	73	71
1928	152	160	73	70
1928	152	160	62	67
1929	160	168	62	67
1930	163	173	63	67
1931	154	165	64	66
1932	119	136	65	69

As to the relative position of male and female workers, we find that according to expectation the position of women deteriorated during the phase of increasing real wages, and again began to improve during the crisis. It seems not improbable from this that the relations between the wages of men and women are more sensitive to general real wage developments than those of skilled and unskilled workers.

A relative development, similar to that of men's and women's wages, can be observed when we compare the wages of the labour aristocracy and of the great mass of the workers :†

## GROSS WAGES OF LABOUR ARISTOCRACY AND GREAT

MASS OF WORKERS, 1924 TO 1932

(1924 = 100)

Year	Labour Aristocracy	Great Mass
1924	100	100
1925	131	127
1926	137	134
1927	150	149
1928	163	158
1929	170	164
1930	163	162
1931	152	153
1932	125	129

\* Wage sets for the years 1924-1928 and 1928-1932 not strictly comparable. For women, the percentages up to 1928 refer to the textile industry only; for the years 1928 to 1932 they refer to the relation generally of skilled and semi-skilled female workers and skilled male workers, and to that of unskilled female and male workers. The figures are taken from *Wirtschaft und Statistik und Statistisches Jahrbuch für das Deutsche Reich*.

† Cf. Jürgen Kuczynski, *Die Entwicklung der Lage der Arbeiterschaft in Europa und Amerika, 1870-1933*.

The wages of the labour aristocracy rose faster than those of the great mass of the workers; by 1929 they were 70 per cent above the 1924 level while those of the great mass increased by only 64 per cent. During the crisis, the labour aristocracy lost ground, and in 1932 the wages of the great mass of the workers were higher above the 1924 level than were those of the labour aristocracy. The movement, thus, was similar to that of the wages of men and women.

The following table gives a general survey of the development of the wages of the labour aristocracy and the great mass of the workers for the half century from 1879 to 1932:

GROSS WAGES OF LABOUR ARISTOCRACY AND GREAT  
MASS OF WORKERS, 1879 TO 1932

	(1900 = 100)	
<i>Trade Cycle</i>	<i>Labour Aristocracy</i>	<i>Great Mass</i>
1879-1886	67	87
1887-1894	79	92
1894-1902	91	97
1903-1909	107	114
1909-1914	121	130
1924-1932	184	218

It is obvious that the labour aristocracy was losing position under monopoly capitalism. While during the nineteenth century years under review the wages of the labour aristocracy forged ahead, monopoly capitalism pressed heavily upon the relative position of the labour aristocracy. In a period of declining real wages, wages of the better paid workers, even if they belong to the labour aristocracy, are depressed more than those of the lower paid workers—whose wages at any time hover around the minimum of subsistence.

All this does not mean, of course, that the labour aristocracy is being abolished; on the contrary, the period of monopoly capitalism is one in which it plays a greater rôle than ever. But it does mean that other methods are used to maintain it, rather than relative wage increases. It also implies probably that it becomes smaller. Though our statistical material is too scanty to ensure a thorough and exhaustive investigation, I believe that the above table should really be headed: "wages of those who, around 1900, belonged to the labour aristocracy and of the

great mass of the workers"; for it is probable that numerous workers who in 1900 were counted among the labour aristocracy no longer belonged to it in the twenties. In the twenties the labour aristocracy was mainly composed of paid trade union officials, town councillors, health insurance (Krankenkassen) officials, local government employees, and so on.

The relative wages of the workers declined during this period with extraordinary rapidity. While real wages were lower than in pre-war years, the income of the rich had increased not inconsiderably:

RELATIVE WAGES, 1860 TO 1932

(1900 = 100)

<i>Trade Cycle</i>	<i>Index</i>
1860-1867	170
1868-1878	134
1879-1886	101
1887-1894	93
1894-1902	76
1903-1909	65
1909-1914	58
1924-1932	43

During the trade cycle of 1924-1932, relative wages were just about one-quarter of what they had been in the sixties of the last century, and less than half of what they had been in the eighties; as compared with the last pre-war years they had declined by about one-quarter. The rapidity of the decline of relative wages during the seventy years under review is truly enormous. The gulf between the rich and the poor, between the few at the top and the many at the bottom, was probably greater in Germany than in any other country—even though the few at the top were not as rich as their fellows in the United States or Great Britain.

In conclusion, we can say that the development of wages in Germany during the years from 1924 to 1932 was so unfavourable as compared with pre-war years that here we have one of the few cases in the history of labour conditions where even a survey of wages alone is indicative of the development of labour conditions, and that it is obvious that they must have deteriorated considerably.



The equipment of German industry rather deteriorated during the years of war and inflation, and the period following 1924 was used to equip German factories with new machines. The years from 1925 to 1929 are known in German economic history as the years of "rationalization," during which the working process was accelerated immensely, partly by new and better machinery, partly by a reorganization of production methods, and partly by driving the German workers at greater speed.

The basis for the intensification of the working process was to some extent the shortening of the working day which had already been introduced in 1919, and the better nutrition of the workers due to the increase in real wages after 1923. But the intensification of the labour process, as well as other means of increasing the productivity per worker, did not cease when the crisis intervened; it continued unabated and the exhaustion of the worker grew from 1929 on, not only for these reasons but also because feeding became poorer.

#### AVERAGE WEEKLY HOURS OF WORK,

1913 TO 1914 AND 1924 TO 1932

<i>Year</i>	<i>Hours of Work (Collective Agreements)</i>	<i>Hours of Work (Actually Worked)</i>
1913-1914	ca 57	—
1924	50½	—
1925	50½	—
1926	50½	—
1927	49½	—
1928	49½	46*
1929	49½	46
1930	49	44½
1931	49	42½
1932	49	41½

The process of the shortening of the actual working week, which was so rapid in the last days of 1918, had made little progress during the following years, even if official figures did indicate a shortening of the working week during the years of crisis; for this was due to short-time work in some industries and factories while the normal working day in other factories was not affected. Of course, the shortening of the working week

\* July-December only.

because of lack of orders should theoretically have benefited the workers affected, enabling them better to endure the increased working pace. In practice, however, it made no difference or even led to increased strain, as the shortened working day meant lower wages, poorer nourishment and, therefore, poorer health.

In the foregoing table I give the weekly hours as fixed by collective agreements\* and the actual number of hours worked, as computed by the Institut für Konjunkturforschung.

During the years from 1924 onward the normal week showed some decline. Much more rapid—during the crisis—was the decline of the actual average working week because of the spread of short-time; it is improbable, however, as the first column of the above table shows, that workers who did not work short-time experienced any material shortening of their working week during the crisis years.

If we now compute an index of production per hour and per worker we get the following results:†

#### PRODUCTIVITY PER HOUR AND WORKER

1913 TO 1914 AND 1924 TO 1932

(1913-1914 = 100)

<i>Year</i>	<i>Index</i>	<i>Year</i>	<i>Index</i>
1913-1914	100	1928	119
1924	88	1929	124
1925	101	1930	125
1926	109	1931	131
1927	118	1932	134

In the first year productivity was still below the pre-war level, having already increased very considerably from 1923 to 1924. From 1924 to 1929 productivity rose substantially and regularly. When the crisis came, productivity was by a quarter higher than before the war. During the crisis productivity increased further from year to year and was in 1932 about a third above the 1913-1914 level.

I think this latter fact is of special significance. As far as we

\* Computed from official hourly and weekly wage statistics; 1913-1914 includes also hours outside collective agreements.

† The figures are slightly revised as compared with those I gave in the above quoted sources. This has been possible on the basis of revised official basic data.

can judge from the scanty data available, productivity, during the nineteenth century, in all the main industrial countries, had a tendency to decline during the crisis. The reasons have been given again and again.\* One of the chief reasons was the tendency of employers rather to keep their best workers with little work to do than to lose them. With the progress of mass-production methods and the dilution of labour, the number of workers an employer was interested in holding on to was too small to play any rôle; therefore, we see him ruthlessly cutting down the number of employed during the crisis, while those who remained worked harder—partly on their own initiative for fear of being thrown out of work. Thus, we have the unique phenomenon in German industrial history of a rapid rise in productivity during a crisis.

\*                    \*                    \*

Accidents are one of the few factors which, during this period, show a favourable development of considerable importance. Here we see how the works' councils and the generally stronger position of labour, as compared with pre-war years, could be of real benefit. The trade unions and the workers' representatives in the factories were able to force through a number of measures which helped materially to decrease the number of accidents. Here we have an example of the good results trade unions can achieve even under monopoly capitalism.

The following table surveys the development of fatal accidents in Germany from 1887 to 1932:

#### FATAL ACCIDENT RATE IN INDUSTRY, 1887 TO 1932

(Per 1,000 Insured)

<i>Trade Cycle</i>	<i>Rate</i>	<i>Year</i>	<i>Rate</i>
1887-1894	0.70	1924	0.45
1894-1902	0.70	1925	0.49
1903-1909	0.64	1926	0.49
1909-1914†	0.61	1927	0.46
1914-1918†	0.85	1928	0.48
1919-1923†	0.62	1929	0.48
1924-1932	0.45	1930	0.49
		1931	0.40
		1932	0.34

\* Cf. e.g. Vol. II of this *Short History*, etc., pp. 89, 91, 154 f.

† No full trade cycle.

In the twenty-five years before the war the fatal accident rate declined per day, but increased—in the nineteenth century considerably and later only slowly—if we take into account the shortening of the working day. During the war it rose rapidly per day as well as per hour. During the years of inflation it was considerably lower than during the war; it was also lower if we take into account the shortening of the working day. But if we compare the years 1919–1923 with the last two pre-war periods the accident rate shows an increase, sometimes per day and always per working hour.

In the following years, however, during the trade cycle 1924–1932, the accident rate declined considerably. It was much lower per day than during any other period of the preceding half century, and it was also lower per hour of exposure. The accident rate, as far as fatal accidents are concerned, had definitely improved.

But while the trade unions and workers' organizations within the factories could exert a definite influence in the direction of improving safety conditions—after all a very limited field—they were, of course, not able to combat the ill effects of a low standard of living upon the workers' health. The one is a success possible within the framework of monopoly capitalism. The other necessitates the overthrow of this régime.

The following table gives a general survey of health conditions among the insured workers:

HEALTH CONDITIONS, 1888 TO 1932					
<i>Trade Cycle</i>	<i>Illnesses</i>	<i>Sick Days</i>	<i>Year</i>	<i>Illnesses</i>	<i>Sick Days</i>
	<i>Per Member</i>			<i>Per Member</i>	
1888–1894	0·35	5·92	1924	0·42	10·7
1894–1902	0·36	6·40	1925	0·52	12·9
1903–1909	0·40	7·83	1926	0·45	12·0
1909–1913*	0·42	8·40	1927	0·54	12·6
1922–1923*	0·41	8·31	1928	0·55	13·3
1924–1932	0·46	11·70	1929	0·58	13·7
			1930	0·42	11·3
			1931	0·36	10·4
			1932	0·30	8·8

The trend of deteriorating health conditions continued. Cases of illness per member were about 30 per cent higher in

\* No full trade cycle.

the twenties than in the eighties and nineties of the last century, and the broadening of the health services cannot explain the whole of this increase. The number of sick-days per member doubled during the same period and an especially steep rise took place during post-war years.

The year-by-year development during the post-war years is even more interesting. There seems to have been a rapid improvement in health conditions during the crisis. But what these figures show is not really an improvement but the growing fear among the workers of losing their jobs owing to sickness, or, when they are so ill that they cannot work, their fear of staying away one day longer than absolutely necessary. And as unemployment during a crisis was so very much greater during the post-war years than formerly, one cannot say that we have here a phenomenon which is valid in every trade cycle, and which, therefore, does not especially influence the last trade cycle under review. It appears, therefore, that health conditions during the last trade cycle were actually worse than the above average indicates.

\* \* \*

It is not difficult to arrive at our conclusions on the development of post-war labour conditions in Germany. Whether we study the inflation period or the following trade cycle, we find ample evidence for the fact that labour conditions, on the whole, were worse in post-war than in pre-war years. The general deterioration of labour conditions during these years was considerable—although in some respects there was an improvement, as for instance, in the case of fatal accidents, or in housing conditions during the years following 1924.

During the crisis, vast masses of the people—and not only the workers—had a feeling similar to that which animated the people of Germany in the late forties of the last century, or during the late months of the last war: things could not go on as they had; there was a limit to what one could stand. There was a conviction that misery and destitution had begun to menace the existence of the people as a whole, and the working class specifically.

Such were the conditions under which the pre-Fascist period of monopoly capitalism in Germany came to an end.



## 5. FASCISM

Then followed Fascism. And with that there must end a really reasoned statistical history of labour conditions in Germany. In the next volume\* to this I have compiled a detailed history of labour conditions under German Fascism, and there I show how, in the course of time, figures begin to lose their meaning.

WAGE RATES IN VARIOUS INDUSTRIES AND IN INDUSTRY AS  
A WHOLE, 1932 TO 1943

(1900 = 100)†

Year	Building	Metal	Textiles	Woodworking	Printing
1932	184	150	174	206	190
1933	164	148	170	195	184
1934	163	148	170	195	184
1935	163	148	170	195	184
1936	163	148	170	195	184
1937	164	148	170	195	184
1938	164	150	170	195	184
1939	166	151	170	195	184
1940	166	151	170	195	184
1941	169	151	175	195	184
1942	170	151	177	195	184

Year	Chemicals	Transport	Mining‡	Industry	Agriculture§	Industry and Agriculture
1932	203	193	160	177	170	175
1933	202	193	161	170	165	170
1934	202	195	163	170	163	168
1935	202	196	165	170	163	168
1936	202	196	166	170	163	168
1937	202	196	167	170	163	168
1938	202	205	169	171	164	169
1939	202	205	169	173	165	171
1940	203	205	169	173	166	171
1941	204	211	169	174	167	172
1942	204	211	185	175	169	173
1943	—	—	—	176	169	174

This does not mean that it is useless to cite any figures on the development of labour conditions. Some still retain a meaning,

\* *A Short History of Labour Conditions in Germany under Fascism, 1933 to the Present Day.*

† Cf. *Statistisches Jahrbuch für das Deutsche Reich and Wirtschaft und Statistik*, annually.

‡ Actual earnings per shift in coal mining, 1932–1938, wage rates, 1938–1944.

§ Estimates since 1935.

and others can be used to show how certain institutions and phenomena have changed their character under Fascism. But it does mean that it is impossible to give even an approximately all-round picture of labour conditions with the help of statistics.

Fascism introduces various new features into the history of labour conditions. For the first time, for instance, we observe almost complete stagnation in wage rates during a period of increasing trade activity.

Wage rates were established at the lowest crisis level and, on the whole, did not rise with increasing production, as has usually been the case in the history of industrial capitalism.

At the same time, unemployment declined and eventually disappeared. This complete disappearance is unique in the period of monopoly capitalism during peace time. The disappearance of unemployment, over a period of several years, which occurred under Fascism, is not only unusual under monopoly capitalism but in the whole history of capitalism. It was due to intense war preparations.

The standard of living of the working class as a whole tended to decline in a period of stable wage rates, absence of unemployment and rising production; it was lower in the summer of 1939, the period of highest pre-war trade activity, than in 1932 during the crisis. Again something unique in the history of industrial capitalism.

Child labour increased, and after a period of contraction the employment of women rose absolutely and relatively: two phenomena well known in the early history of industrial capitalism. Also the length of the working week increased sharply. Again something we observe in the early history of industrial capitalism.

Fascism is a blend of all the methods of exploitation we have become acquainted with throughout the history of industrial capitalism. A rise in the intensity of work is combined with a lengthening of the working day; the spread of mass production is combined with the increased employment of women and children.

But Fascism is not satisfied with combining all the known methods of capitalist exploitation. It goes farther back into history and introduces elements and forms of exploitation known

only in former periods. It introduces elements of slavery and feudalism, and extends them beyond the sphere of the working class. Peasants, independent craftsmen and shopkeepers are drawn into this process.

Hardships develop under new conditions: while the national income increases and production rises, scarcity of food, clothing and housing is developing. Deteriorating health accompanies increased security of work. All experience with regard to the pattern of labour conditions, the relative development of various factors, the relations of the different aspects of labour conditions, become invalid as a guide when we study labour conditions under Fascism.

Under Fascism the contradictions of capitalist economy attain their fullest extent. In fact, all the contradictions of all past and present systems of exploitation find their sharpest expression under Fascism. As in a summary of all that the masses have suffered since olden times, Fascism reproduces all the evils on a terribly enlarged scale, to a cruelly intensified degree. Fascism is not merely a period of dire hardship, as were the forties of the last century or similar periods. It is the concentrated and aggravated sum of all the suffering which the people have endured throughout history.

Thus ends the history of labour conditions of the German working class; thus ends also the history of the oppressed people of Germany, which goes back much farther than capitalism. What follows will be a new chapter—not in the history of oppression, for that history is finished. The German people will either go down with Hitler or they will rise to become a free people.

For all those who do not look at the world with the remoteness of irresponsibility, and especially to all those Germans who feel the intolerable burden of moral responsibility for all that Fascism has brought to the world, and who at the same time are animated by a true love for their country, there is only one course: the overthrow of the Fascist system with the help of the German people themselves.

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By S. KAHN

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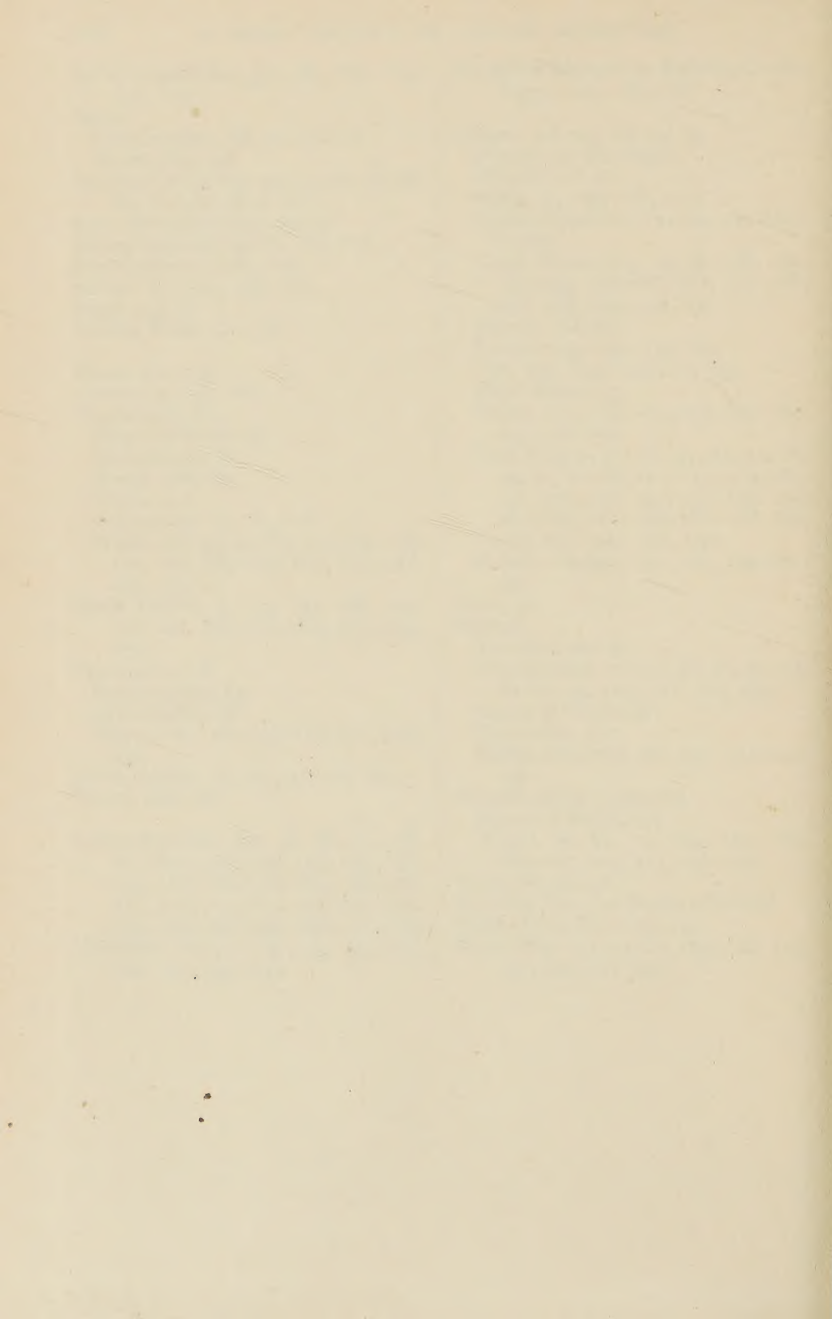
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